



Amelia
#6

SEQUENCE LISTING

<110> Edinger et al.

<120> Novel Polypeptides and Nucleic Acids Encoding Same

<130> 21402-175CIP1

<140> 09/997,425

<141> 2001-11-29

<150> 60/242,485

<151> 2000-10-23

<150> 60/263,339

<151> 2001-01-22

<150> 60/264,850

<151> 2001-01-29

<150> 10/035,568

<151> 2001-10-22

<160> 92

<170> PatentIn Ver. 2.1

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<212> DNA

<213> Homo sapiens

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<210> 2
<211> 523
<212> PRT
<213> Homo sapiens

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Glu Met Ala Asp Thr Arg Ser Val His Glu Thr Arg Phe Glu Ala Ala
35 40 45
Val Lys Val Ile Gln Ser Leu Pro Lys Asn Gly Ser Phe Gln Pro Thr
50 55 60
Asn Glu Met Met Leu Lys Phe Tyr Ser Phe Tyr Lys Gln Ala Thr Glu
65 70 75 80
Gly Pro Cys Lys Leu Ser Arg Pro Gly Phe Trp Asp Pro Ile Gly Arg
85 90 95
Tyr Lys Trp Asp Ala Trp Ser Ser Leu Gly Asp Met Thr Lys Glu Glu
100 105 110
Ala Met Ile Ala Tyr Val Glu Glu Met Lys Lys Ile Ile Glu Thr Met
115 120 125
Pro Met Thr Glu Lys Val Glu Glu Leu Leu Arg Val Ile Gly Pro Phe
130 135 140
Tyr Glu Ile Val Glu Asp Lys Lys Ser Gly Arg Ser Ser Asp Ile Thr
145 150 155 160
Ser Asp Leu Gly Asn Val Leu Thr Ser Ala Pro Asn Ala Lys Thr Val
165 170 175
Asn Gly Lys Ala Glu Ser Ser Asp Ser Gly Ala Glu Ser Glu Glu Glu
180 185 190
Glu Ala Gln Glu Glu Val Lys Gly Ala Glu Gln Ser Asp Asn Asp Lys
195 200 205
Lys Met Met Lys Lys Ser Ala Asp His Lys Asn Leu Glu Val Ile Val
210 215 220
Thr Asn Gly Tyr Asp Lys Asp Gly Phe Val Gln Asp Ile Gln Asn Asp

225		230		235		240
Ile His Ala Ser Ser Ser Leu Asn Gly Arg Ser Thr Glu Glu Val Lys						
		245		250		255
Pro Ile Asp Glu Asn Leu Gly Gln Thr Gly Lys Ser Ala Val Cys Ile						
		260		265		270
His Gln Asp Ile Asn Asp Asp His Val Glu Asp Val Thr Gly Ile Gln						
		275		280		285
His Leu Thr Ser Asp Ser Asp Ser Glu Val Tyr Cys Asp Ser Met Glu						
		290		295		300
Gln Phe Gly Gln Glu Glu Ser Leu Asp Ser Phe Thr Ser Asn Asn Gly						
305		310		315		320
Pro Phe Gln Tyr Tyr Leu Gly Gly His Ser Ser Gln Pro Met Glu Asn						
		325		330		335
Ser Gly Phe Arg Glu Asp Ile Gln Val Pro Pro Gly Asn Gly Asn Ile						
		340		345		350
Gly Asn Met Gln Val Val Ala Val Glu Gly Lys Gly Glu Val Lys His						
		355		360		365
Gly Gly Glu Asp Gly Arg Asn Asn Ser Gly Ala Pro His Arg Glu Lys						
		370		375		380
Arg Gly Gly Glu Thr Asp Glu Phe Ser Asn Val Arg Arg Gly Arg Gly						
385		390		395		400
His Arg Ile Gln His Leu Ser Glu Gly Thr Lys Gly Arg Gln Val Gly						
		405		410		415
Ser Gly Gly Asp Gly Glu Arg Trp Gly Ser Asp Arg Gly Ser Arg Gly						
		420		425		430
Ser Leu Asn Glu Gln Ile Ala Leu Val Leu Met Arg Leu Gln Glu Asp						
		435		440		445
Met Gln Asn Val Leu Gln Arg Leu Gln Lys Leu Glu Thr Leu Thr Ala						
		450		455		460
Leu Gln Ala Lys Ser Ser Thr Ser Thr Leu Gln Thr Ala Pro Gln Pro						
465		470		475		480
Thr Ser Gln Arg Pro Ser Trp Trp Pro Phe Glu Met Ser Pro Gly Val						
		485		490		495
Leu Thr Phe Ala Ile Ile Trp Pro Phe Ile Ala Gln Trp Leu Val Tyr						
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Leu Tyr Tyr Gln Arg Arg Arg Arg Lys Leu Asn						
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<210> 3
 <211> 534
 <212> PRT
 <213> Homo sapiens

<220>
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 <223> Wherein Xaa is any amino acid as defined in the
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 20 25 30
 Glu Met Ala Asp Thr Arg Ser Val His Glu Thr Arg Phe Glu Ala Ala
 35 40 45
 Val Lys Val Ile Gln Ser Leu Pro Lys Asn Asp Ser Phe Gln Pro Thr
 50 55 60
 Asn Glu Met Met Leu Lys Phe Tyr Ser Phe Tyr Lys Gln Ala Thr Glu
 65 70 75 80
 Gly Pro Cys Lys Leu Ser Arg Pro Gly Phe Trp Asp Pro Ile Gly Arg
 85 90 95
 Tyr Lys Trp Asp Ala Trp Ser Ser Leu Gly Asp Met Thr Lys Glu Glu
 100 105 110
 Ala Met Ile Ala Tyr Val Glu Glu Met Lys Lys Ile Ile Glu Thr Met
 115 120 125
 Pro Met Thr Glu Lys Val Glu Glu Leu Leu Arg Val Ile Gly Pro Phe
 130 135 140
 Tyr Glu Ile Val Glu Asp Lys Lys Ser Gly Arg Ser Ser Asp Ile Thr
 145 150 155 160
 Ser Val Arg Leu Glu Lys Ile Ser Lys Cys Leu Glu Asp Leu Gly Asn
 165 170 175
 Val Leu Thr Ser Thr Pro Asn Ala Lys Thr Val Asn Gly Lys Ala Glu
 180 185 190
 Ser Ser Asp Ser Gly Ala Glu Ser Glu Glu Glu Glu Ala Gln Glu Glu
 195 200 205
 Val Lys Gly Ala Glu Gln Ser Asp Asn Asp Lys Lys Met Met Lys Lys
 210 215 220
 Ser Ala Asp His Lys Asn Leu Glu Val Ile Val Thr Asn Gly Tyr Asp
 225 230 235 240

Lys Asp Gly Phe Val Gln Asp Ile Gln Asn Asp Ile His Ala Ser Ser
 245 250 255
 Ser Leu Asn Gly Arg Ser Thr Glu Glu Val Lys Pro Ile Asp Glu Asn
 260 265 270
 Leu Gly Gln Thr Gly Lys Ser Ala Val Cys Ile His Gln Asp Ile Asn
 275 280 285
 Asp Asp His Val Glu Asp Val Thr Gly Ile Gln His Leu Thr Ser Asp
 290 295 300
 Ser Asp Ser Glu Val Tyr Cys Asp Ser Met Glu Gln Phe Gly Gln Glu
 305 310 315 320
 Glu Ser Leu Asp Ser Phe Thr Ser Asn Asn Gly Pro Phe Gln Tyr Tyr
 325 330 335
 Leu Gly Gly His Ser Ser Gln Pro Met Glu Asn Ser Gly Phe Arg Glu
 340 345 350
 Asp Ile Gln Val Pro Pro Gly Asn Gly Asn Ile Gly Asn Met Gln Val
 355 360 365
 Val Ala Val Glu Gly Lys Gly Glu Val Lys His Gly Gly Glu Asp Gly
 370 375 380
 Arg Asn Asn Ser Gly Ala Pro His Arg Glu Lys Arg Gly Gly Glu Thr
 385 390 395 400
 Asp Glu Phe Ser Asn Val Arg Arg Gly Arg Gly His Arg Met Gln His
 405 410 415
 Leu Ser Glu Gly Thr Lys Gly Arg Gln Val Gly Ser Gly Gly Asp Gly
 420 425 430
 Glu Arg Trp Gly Ser Asp Arg Gly Ser Arg Gly Ser Leu Asn Glu Gln
 435 440 445
 Ile Ala Leu Val Leu Met Arg Leu Gln Glu Asp Met Gln Asn Val Leu
 450 455 460
 Gln Arg Leu Gln Lys Leu Glu Thr Leu Thr Ala Leu Gln Ala Lys Ser
 465 470 475 480
 Ser Thr Ser Thr Leu Gln Thr Ala Pro Gln Pro Thr Ser Gln Arg Pro
 485 490 495
 Ser Trp Trp Pro Phe Glu Met Ser Pro Gly Val Leu Thr Phe Ala Ile
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 Arg Arg Arg Lys Leu Asn
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<210> 4
 <211> 536
 <212> PRT
 <213> Homo sapiens

<400> 4

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		20						25					30		
Gln	Leu	Glu	Met	Ala	Asp	Thr	Arg	Ser	Val	His	Glu	Thr	Arg	Phe	Glu
		35					40					45			
Ala	Ala	Val	Lys	Val	Ile	Gln	Ser	Leu	Pro	Lys	Asn	Gly	Ser	Phe	Gln
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Pro	Thr	Asn	Glu	Met	Met	Leu	Lys	Phe	Tyr	Ser	Phe	Tyr	Lys	Gln	Ala
	65				70					75					80
Thr	Glu	Gly	Pro	Cys	Lys	Leu	Ser	Arg	Pro	Gly	Phe	Trp	Asp	Pro	Ile
				85					90					95	
Gly	Arg	Tyr	Lys	Trp	Asp	Ala	Trp	Ser	Ser	Leu	Gly	Asp	Met	Thr	Lys
			100					105					110		
Glu	Glu	Ala	Met	Ile	Ala	Tyr	Val	Glu	Glu	Met	Lys	Lys	Ile	Ile	Glu
		115					120					125			
Thr	Met	Pro	Met	Thr	Glu	Lys	Val	Glu	Glu	Leu	Leu	Arg	Val	Ile	Gly
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Ile	Thr	Ser	Val	Arg	Leu	Glu	Lys	Ile	Ser	Lys	Cys	Leu	Glu	Asp	Leu
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			180					185					190		
Ala	Glu	Ser	Ser	Asp	Ser	Gly	Ala	Glu	Ser	Glu	Glu	Glu	Glu	Ala	Gln
		195					200					205			
Glu	Glu	Val	Lys	Gly	Ala	Glu	Gln	Ser	Asp	Asn	Asp	Lys	Lys	Met	Met
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Lys	Lys	Ser	Ala	Asp	His	Lys	Asn	Leu	Glu	Val	Ile	Val	Thr	Asn	Gly
	225				230					235					240
Tyr	Asp	Lys	Asp	Gly	Phe	Val	Gln	Asp	Ile	Gln	Asn	Asp	Ile	His	Ala
				245					250					255	
Ser	Ser	Ser	Leu	Asn	Gly	Arg	Ser	Thr	Glu	Glu	Val	Lys	Pro	Ile	Asp
			260					265					270		

Glu Asn Leu Gly Gln Thr Gly Lys Ser Ala Val Cys Ile His Gln Asp
 275 280 285
 Ile Asn Asp Asp His Val Glu Asp Val Thr Gly Ile Gln His Leu Thr
 290 295 300
 Ser Asp Ser Asp Ser Glu Val Tyr Cys Asp Ser Met Glu Gln Phe Gly
 305 310 315 320
 Gln Glu Glu Ser Leu Asp Ser Phe Thr Ser Asn Asn Gly Pro Phe Gln
 325 330 335
 Tyr Tyr Leu Gly Gly His Ser Ser Gln Pro Met Glu Asn Ser Gly Phe
 340 345 350
 Arg Glu Asp Ile Gln Val Pro Pro Gly Asn Gly Asn Ile Gly Asn Met
 355 360 365
 Gln Val Val Ala Val Glu Gly Lys Gly Glu Val Lys His Gly Gly Glu
 370 375 380
 Asp Gly Arg Asn Asn Ser Gly Ala Pro His Arg Glu Lys Arg Gly Gly
 385 390 395 400
 Glu Thr Asp Glu Phe Ser Asn Val Arg Arg Gly Arg Gly His Arg Met
 405 410 415
 Gln His Leu Ser Glu Gly Thr Lys Gly Arg Gln Val Gly Ser Gly Gly
 420 425 430
 Asp Gly Glu Arg Trp Gly Ser Asp Arg Gly Ser Arg Gly Ser Leu Asn
 435 440 445
 Glu Gln Ile Ala Leu Val Leu Met Arg Leu Gln Glu Asp Met Gln Asn
 450 455 460
 Val Leu Gln Arg Leu Gln Lys Leu Glu Met Leu Thr Ala Leu Gln Ala
 465 470 475 480
 Lys Ser Ser Thr Ser Thr Leu Gln Thr Ala Pro Gln Pro Thr Ser Gln
 485 490 495
 Arg Pro Ser Trp Trp Pro Phe Glu Met Ser Pro Gly Val Leu Thr Phe
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 Gln Arg Arg Arg Arg Lys Leu Asn
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 <212> PRT
 <213> Bos taurus

<400> 5

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			20					25					30		
Leu	Glu	Met	Arg	His	Thr	Arg	Ser	Val	His	Glu	Thr	Arg	Phe	Glu	Ala
		35					40					45			
Ala	Val	Lys	Val	Ile	Gln	Ser	Leu	Pro	Lys	Asn	Gly	Ser	Phe	Gln	Pro
	50					55					60				
Thr	Asn	Glu	Met	Met	Leu	Lys	Phe	Tyr	Ser	Phe	Tyr	Lys	Gln	Ala	Thr
65					70					75					80
Glu	Gly	Pro	Cys	Lys	Leu	Ser	Lys	Pro	Gly	Phe	Trp	Asp	Pro	Val	Gly
				85					90					95	
Arg	Tyr	Lys	Trp	Asp	Ala	Trp	Ser	Ser	Leu	Gly	Asp	Met	Thr	Lys	Glu
			100					105					110		
Glu	Ala	Met	Ile	Ala	Tyr	Val	Glu	Glu	Met	Lys	Lys	Ile	Leu	Glu	Thr
		115					120					125			
Met	Pro	Met	Thr	Glu	Lys	Val	Glu	Glu	Leu	Leu	His	Val	Ile	Gly	Pro
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Phe	Tyr	Glu	Ile	Val	Glu	Asp	Lys	Lys	Ser	Gly	Arg	Ser	Ser	Asp	Leu
145					150					155					160
Thr	Ser	Val	Arg	Leu	Glu	Lys	Ile	Ser	Lys	Cys	Leu	Glu	Asp	Leu	Gly
				165					170					175	
Asn	Val	Leu	Ala	Ser	Thr	Pro	Asn	Ala	Lys	Thr	Val	Asn	Gly	Lys	Ala
			180					185					190		
Glu	Ser	Ser	Asp	Ser	Gly	Ala	Glu	Ser	Glu	Glu	Glu	Ala	Ala	Gln	Glu
		195					200					205			
Asp	Pro	Lys	Arg	Pro	Glu	Pro	Arg	Asp	Ser	Asp	Lys	Lys	Met	Met	Lys
	210					215					220				
Lys	Ser	Ala	Asp	His	Lys	Asn	Leu	Glu	Ile	Ile	Val	Thr	Asn	Gly	Tyr
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Asp	Lys	Asp	Ser	Phe	Val	Gln	Gly	Val	Gln	Asn	Ser	Ile	His	Thr	Ser
				245					250					255	
Pro	Ser	Leu	Asn	Gly	Arg	Cys	Thr	Glu	Glu	Val	Lys	Ser	Val	Asp	Glu
			260					265					270		
Asn	Leu	Glu	Gln	Thr	Gly	Lys	Thr	Val	Val	Phe	Val	His	Gln	Asp	Val
		275					280					285			
Asn	Ser	Asp	His	Val	Glu	Asp	Ile	Ser	Gly	Ile	Gln	His	Leu	Thr	Ser

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Glu Glu Ser Leu Asp Gly Phe Ile Ser Asn Asn Gly Pro Phe Ser Tyr		
	325 330	335
Tyr Leu Gly Gly Asn Pro Ser Gln Pro Leu Glu Ser Ser Gly Phe Pro		
	340 345	350
Glu Ala Val Gln Gly Leu Pro Gly Asn Gly Ser Pro Glu Asp Met Gln		
	355 360	365
Gly Ala Val Val Glu Gly Lys Gly Glu Val Lys Arg Gly Gly Glu Asp		
370	375	380
Gly Gly Ser Asn Ser Gly Ala Pro His Arg Glu Lys Arg Ala Gly Glu		
385	390	395 400
Ser Glu Glu Phe Ser Asn Ile Arg Arg Gly Arg Gly His Arg Met Gln		
	405 410	415
His Leu Ser Glu Gly Ser Lys Gly Arg Gln Val Gly Ser Gly Gly Asp		
	420 425	430
Gly Glu Arg Trp Gly Ser Asp Arg Gly Ser Arg Gly Ser Leu Asn Glu		
	435 440	445
Gln Ile Ala Leu Val Leu Met Arg Leu Gln Glu Asp Met Gln Asn Val		
450	455	460
Leu Gln Arg Leu His Lys Leu Glu Met Leu Ala Ala Ser Gln Ala Lys		
465	470	475 480
Ser Ser Ala Leu Gln Thr Ser Asn Gln Pro Thr Ser Pro Arg Pro Ser		
	485 490	495
Trp Trp Pro Phe Glu Met Ser Pro Gly Ala Leu Thr Phe Ala Ile Ile		
	500 505	510
Trp Pro Phe Ile Ala Gln Trp Leu Val His Leu Tyr Tyr Gln Arg Arg		
	515 520	525
Arg Arg Lys Leu Asn		
530		

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 <212> PRT
 <213> Mus musculus

<400> 6
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 Ala Asp Thr Pro Ser Val Tyr Glu Thr Arg Phe Glu Ala Ala Val Lys
 35 40 45
 Val Ile Gln Ser Leu Pro Lys Asn Gly Ser Phe Gln Pro Thr Asn Glu
 50 55 60
 Met Met Leu Lys Phe Tyr Ser Phe Tyr Lys Gln Ala Thr Glu Gly Pro
 65 70 75 80
 Cys Lys Leu Ser Arg Pro Gly Phe Trp Asp Pro Ile Gly Arg Tyr Lys
 85 90 95
 Trp Asp Ala Trp Ser Ser Leu Gly Asp Met Thr Lys Glu Glu Ala Met
 100 105 110
 Ile Ala Tyr Val Glu Glu Met Lys Lys Ile Ile Glu Thr Met Pro Met
 115 120 125
 Thr Glu Lys Val Glu Glu Leu Leu His Val Ile Gly Pro Phe Tyr Glu
 130 135 140
 Ile Val Glu Asp Lys Lys Ser Ser Lys Ser Ser Asp Leu Thr Ser Asp
 145 150 155 160
 Leu Gly Asn Val Leu Thr Ser Ser Asn Ala Lys Ala Val Asn Gly Lys
 165 170 175
 Ala Glu Ser Ser Asp Ser Gly Ala Glu Ser Glu Glu Glu Ala Gln
 180 185 190
 Glu Glu Leu Lys Gly Ala Glu Gln Ser Gly Ser Asp Asp Lys Lys Thr
 195 200 205
 Leu Lys Lys Ser Ala Asp Lys Asn Leu Glu Ile Ile Val Thr Asn Gly
 210 215 220
 Tyr Lys Gly Ser Phe Val Gln Asp Ile Gln Ser Asp Ile His Thr Asp
 225 230 235 240
 Ser Ser Arg Ser Thr Arg Ser Ser Glu Asp Glu Lys Pro Gly Asp Glu
 245 250 255
 Ser Ser Gln Gln Thr Gly His Thr Ile Val Cys Ala His Gln Asp Arg
 260 265 270
 Asn Glu Asp Pro Ser Glu Asp Ala Ser Gly Ile His His Leu Thr Ser
 275 280 285
 Asp Ser Asp Ser Glu Val Tyr Cys Asp Ser Met Glu Gln Phe Gly Gln
 290 295 300
 Glu Glu Tyr Tyr Leu Gly Gly Asp Pro Thr Gln His Leu Glu Ser Ser
 305 310 315 320

Gly Phe Cys Glu Asp Ala Gln Gln Ser Pro Gly Asn Gly Ser Ile Gly
 325 330 335
 Lys Met Trp Met Val Ala Val Lys Gly Lys Gly Glu Val Lys His Gly
 340 345 350
 Gly Glu Asp Gly Arg Ser Ser Ser Gly Ala Pro His Arg Glu Thr Arg
 355 360 365
 Gly Gly Glu Ser Glu Asp Phe Ser Ser Val Arg Arg Gly Arg Val Gly
 370 375 380
 Asn Arg Ile Pro His Leu Ser Glu Gly Pro Lys Gly Arg Gln Val Gly
 385 390 395 400
 Ser Gly Gly Asp Gly Glu Arg Trp Gly Ser Asp Arg Gly Ser Arg Gly
 405 410 415
 Ser Leu Asn Glu Gln Ile Ala Leu Val Leu Ile Arg Leu Gln Glu Asp
 420 425 430
 Met Gln Asn Val Leu Gln Arg Leu His Lys Leu Glu Thr Leu Thr Ala
 435 440 445
 Ser Gln Ala Lys Leu Ser Leu Gln Thr Ser Asn Gln Pro Ser Ser Gln
 450 455 460
 Arg Pro Ala Trp Trp Pro Phe Glu Met Ser Pro Gly Ala Leu Ala Phe
 465 470 475 480
 Ala Ile Ile Trp Pro Phe Ile Ala Gln Trp Leu Ala His Leu Tyr Tyr
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 Gln Arg Arg Arg Arg Lys Leu Asn
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<210> 7
 <211> 283
 <212> PRT
 <213> Homo sapiens

<400> 7
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 20 25 30
 His Gln Asp Ile Asn Asp Asp His Val Glu Asp Val Thr Gly Ile Gln
 35 40 45
 His Leu Thr Ser Asp Ser Asp Ser Glu Val Tyr Cys Asp Ser Met Glu
 50 55 60
 Gln Phe Gly Gln Glu Glu Ser Leu Asp Ser Phe Thr Ser Asn Asn Gly
 65 70 75 80

Gln Ala Thr Val Gly Asp Cys Asn Thr Glu Lys Pro Gly Met Phe Asp
35 40 45

Leu Lys Gly Arg Ala Lys Trp Asp Ala Trp Asn Glu Leu Lys Gly Met
50 55 60

Ser Lys Glu Glu Ala Met Lys Ala Tyr Ile Ala Lys Val Glu Glu Leu
65 70 75 80

Ile Ala Lys Tyr Ala
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<210> 9
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
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primer

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<210> 10
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 10
gattttcttg tgaacaccac aatccag 27

<210> 11
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 11
tattacttgg gtggcattc ca 22

<210> 12
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:oligonucleotide
 primer

 <400> 12
 caaccatgg aaaattctgg atttcg 26

 <210> 13
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 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:oligonucleotide
 primer

 <400> 13
 atattcccaa tggtgccatt tc 22

 <210> 14
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 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:oligonucleotide
 primer

 <400> 14
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 <210> 15
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 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:oligonucleotide
 primer

 <400> 15
 ctcagccac ctcacagaga ccatct 26

 <210> 16
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 <220>
 <223> Description of Artificial Sequence:oligonucleotide
 primer

 <400> 16

ttagcacacc aggagacatc tc 22

<210> 17
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<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 17
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<210> 18
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<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 18
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<210> 19
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<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 19
gtagcacac caggagacat ct 22

<210> 20
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<212> PRT
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<220>
<223> Description of Artificial Sequence:consensus
sequence

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Lys Asn Gly Pro Val Lys Pro Ser Asn Glu Glu Lys Leu Lys Leu Tyr
20 25 30

Ser Leu Tyr Lys Gln Ala Thr Val Gly Asp Val Asn Thr Glu Arg Pro
35 40 45

Gly Met Phe Asp Leu Lys Gly Arg Ala Lys Trp Asp Ala Trp Asn Glu
50 55 60

Leu Lys Gly Met Ser Lys Glu Glu Ala Met Lys Ala Tyr Ile Ala Lys
65 70 75 80

Val Glu Glu Leu Ile Ala Lys Tyr Ala
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<210> 21
<211> 1747
<212> DNA
<213> Homo sapiens

<400> 21
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caaccactgt gcaataaaaag gccatatgat ggcaaacggt agcacaccag gagacatctc 240
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aaggaga 1747

<210> 22
<211> 523
<212> PRT
<213> Homo sapiens

<400> 22

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			20					25					30		
Glu	Met	Ala	Asp	Thr	Arg	Ser	Val	His	Glu	Thr	Arg	Phe	Glu	Ala	Ala
		35					40					45			
Val	Lys	Val	Ile	Gln	Ser	Leu	Pro	Lys	Asn	Gly	Ser	Phe	Gln	Pro	Thr
	50					55					60				
Asn	Glu	Met	Met	Leu	Lys	Phe	Tyr	Ser	Phe	Tyr	Lys	Gln	Ala	Thr	Glu
65					70					75					80
Gly	Pro	Cys	Lys	Leu	Ser	Arg	Pro	Gly	Phe	Trp	Asp	Pro	Ile	Gly	Arg
				85					90					95	
Tyr	Lys	Trp	Asp	Ala	Trp	Ser	Ser	Leu	Gly	Asp	Met	Thr	Lys	Glu	Glu
			100					105					110		
Ala	Met	Ile	Ala	Tyr	Val	Glu	Glu	Met	Lys	Lys	Ile	Ile	Glu	Thr	Met
		115					120					125			
Pro	Met	Thr	Glu	Lys	Val	Glu	Glu	Leu	Leu	Arg	Val	Ile	Gly	Pro	Phe
	130					135					140				
Tyr	Glu	Ile	Val	Glu	Asp	Lys	Lys	Ser	Gly	Arg	Ser	Ser	Asp	Ile	Thr
145					150					155					160
Ser	Asp	Leu	Gly	Asn	Val	Leu	Thr	Ser	Ala	Pro	Asn	Ala	Lys	Thr	Val
				165					170					175	
Asn	Gly	Lys	Ala	Glu	Ser	Ser	Asp	Ser	Gly	Ala	Glu	Ser	Glu	Glu	Glu
		180						185					190		
Glu	Ala	Gln	Glu	Glu	Val	Lys	Gly	Ala	Glu	Gln	Ser	Asp	Asn	Asp	Lys
		195					200					205			
Lys	Met	Met	Lys	Lys	Ser	Ala	Asp	His	Lys	Asn	Leu	Glu	Val	Ile	Val
	210					215					220				
Thr	Asn	Gly	Tyr	Asp	Lys	Asp	Gly	Phe	Val	Gln	Asp	Ile	Gln	Asn	Asp
225					230					235				240	
Ile	His	Ala	Ser	Ser	Ser	Leu	Asn	Gly	Arg	Ser	Thr	Glu	Glu	Val	Lys
				245					250					255	
Pro	Ile	Asp	Glu	Asn	Leu	Gly	Gln	Thr	Gly	Lys	Ser	Ala	Val	Cys	Ile
		260						265					270		
His	Gln	Asp	Ile	Asn	Asp	Asp	His	Val	Glu	Asp	Val	Thr	Gly	Ile	Gln
		275					280					285			
His	Leu	Thr	Ser	Asp	Ser	Asp	Ser	Glu	Val	Tyr	Cys	Asp	Ser	Met	Glu
	290					295					300				

Gln Phe Gly Gln Glu Glu Ser Leu Asp Ser Phe Thr Ser Asn Asn Gly
 305 310 315 320
 Pro Phe Gln Tyr Tyr Leu Gly Gly His Ser Ser Gln Pro Met Glu Asn
 325 330 335
 Ser Gly Phe Arg Glu Asp Ile Gln Val Pro Pro Gly Asn Gly Asn Ile
 340 345 350
 Gly Asn Met Gln Val Val Ala Val Glu Gly Lys Gly Glu Val Lys His
 355 360 365
 Gly Gly Glu Asp Gly Arg Asn Asn Ser Gly Ala Pro His Arg Glu Lys
 370 375 380
 Arg Gly Gly Glu Thr Asp Glu Phe Ser Asn Val Arg Arg Gly Arg Gly
 385 390 395 400
 His Arg Ile Gln His Leu Ser Glu Gly Thr Lys Gly Arg Gln Val Gly
 405 410 415
 Ser Gly Gly Asp Gly Glu Arg Trp Gly Ser Asp Arg Gly Ser Arg Gly
 420 425 430
 Ser Leu Asn Glu Gln Ile Ala Leu Val Leu Met Arg Leu Gln Glu Asp
 435 440 445
 Met Gln Asn Val Leu Gln Arg Leu Gln Lys Leu Glu Thr Leu Thr Ala
 450 455 460
 Leu Gln Ala Lys Ser Ser Thr Ser Thr Leu Gln Thr Ala Pro Gln Pro
 465 470 475 480
 Thr Ser Gln Arg Pro Ser Trp Trp Pro Phe Glu Met Ser Pro Gly Val
 485 490 495
 Leu Thr Phe Ala Ile Ile Trp Pro Phe Ile Ala Gln Trp Leu Val Tyr
 500 505 510
 Leu Tyr Tyr Gln Arg Arg Arg Arg Lys Leu Asn
 515 520

<210> 23
 <211> 1432
 <212> DNA
 <213> Homo sapiens

<400> 23
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 gggttcattcc agccaacaaa tgaaatgatg cttaaatttt atagcttcta taagcaggca 180
 actgaaggac cctgtaaaact ttcaaggcct ggatttttggg atcctatttg aagatataaa 240
 tgggatgctt ggagttcact ggggtgatatg accaaagagg aagccatgat tgcataatgtt 300
 gaagaaatga aaaagattat tgaaactatg ccaatgactg agaaagtga agaattgctg 360
 cgtgtcatag gtccatttta tgaaattgtc gaggacaaaa agagtggcag gagttctgat 420

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ataacctcag atcttggttaa tgttctcact tctactccga acgccaaaac cgттаатггт 480
aaagctgaaa gcagtгacag tggagccgag tctgaggaag aagaggccca agaagaagtг 540
aaaggagcag aacaaaгtga таатгатааg аааатгатаg агаагтсagc агaccataаg 600
aatttggaag tcattгtcac таатггctat gataааgаtg gctttгttca ggatatacag 660
aatгacattc atgccagttc ttccctgaat ggcagaagca ctgaagaagt aaagcccatt 720
gatgaaaact tggggcaaac tggaaaatct gctгtttgca ttcaccaaga tataaatgat 780
gatcatgttg aagatгttac aggaattcag catttgacaa gcgattcaga cagtgaagtт 840
tactгtgatt ctatggaaca atttgгacaa gaagagtctt tagacagctt tacгtccaac 900
aatгgaccat ttcagtatta ctгgggtгgt cattccagtc aacccatgga aaattctгga 960
tttcгtgaag atattcaagt acctcctgga aatggcaaca ttgggaatat gcaggтgгtt 1020
gcagtтgaag gaaaaggтga агtcaagcat ggaggagaag atggcgggaa таacagcgga 1080
gcaccacacc gggagaagcg aggcggagaa actгacgaat tctctaатgt tagaagagga 1140
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<210> 24
 <211> 477
 <212> PRT
 <213> Homo sapiens

<400> 24

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			20					25					30		
Val	Ile	Gln	Ser	Leu	Pro	Lys	Asn	Gly	Ser	Phe	Gln	Pro	Thr	Asn	Glu
	35						40					45			
Met	Met	Leu	Lys	Phe	Tyr	Ser	Phe	Tyr	Lys	Gln	Ala	Thr	Glu	Gly	Pro
	50					55				60					
Cys	Lys	Leu	Ser	Arg	Pro	Gly	Phe	Trp	Asp	Pro	Ile	Gly	Arg	Tyr	Lys
	65				70					75					80
Trp	Asp	Ala	Trp	Ser	Ser	Leu	Gly	Asp	Met	Thr	Lys	Glu	Glu	Ala	Met
			85						90					95	
Ile	Ala	Tyr	Val	Glu	Glu	Met	Lys	Lys	Ile	Ile	Glu	Thr	Met	Pro	Met
		100						105					110		
Thr	Glu	Lys	Val	Glu	Glu	Leu	Leu	Arg	Val	Ile	Gly	Pro	Phe	Tyr	Glu
		115					120					125			
Ile	Val	Glu	Asp	Lys	Lys	Ser	Gly	Arg	Ser	Ser	Asp	Ile	Thr	Ser	Asp
	130					135					140				
Leu	Gly	Asn	Val	Leu	Thr	Ser	Thr	Pro	Asn	Ala	Lys	Thr	Val	Asn	Gly
	145				150					155					160
Lys	Ala	Glu	Ser	Ser	Asp	Ser	Gly	Ala	Glu	Ser	Glu	Glu	Glu	Glu	Ala
			165					170						175	

Gln Glu Glu Val Lys Gly Ala Glu Gln Ser Asp Asn Asp Lys Lys Met
 180 185 190
 Met Lys Lys Ser Ala Asp His Lys Asn Leu Glu Val Ile Val Thr Asn
 195 200 205
 Gly Tyr Asp Lys Asp Gly Phe Val Gln Asp Ile Gln Asn Asp Ile His
 210 215 220
 Ala Ser Ser Ser Leu Asn Gly Arg Ser Thr Glu Glu Val Lys Pro Ile
 225 230 235 240
 Asp Glu Asn Leu Gly Gln Thr Gly Lys Ser Ala Val Cys Ile His Gln
 245 250 255
 Asp Ile Asn Asp Asp His Val Glu Asp Val Thr Gly Ile Gln His Leu
 260 265 270
 Thr Ser Asp Ser Asp Ser Glu Val Tyr Cys Asp Ser Met Glu Gln Phe
 275 280 285
 Gly Gln Glu Glu Ser Leu Asp Ser Phe Thr Ser Asn Asn Gly Pro Phe
 290 295 300
 Gln Tyr Tyr Leu Gly Gly His Ser Ser Gln Pro Met Glu Asn Ser Gly
 305 310 315 320
 Phe Arg Glu Asp Ile Gln Val Pro Pro Gly Asn Gly Asn Ile Gly Asn
 325 330 335
 Met Gln Val Val Ala Val Glu Gly Lys Gly Glu Val Lys His Gly Gly
 340 345 350
 Glu Asp Gly Gly Asn Asn Ser Gly Ala Pro His Arg Glu Lys Arg Gly
 355 360 365
 Gly Glu Thr Asp Glu Phe Ser Asn Val Arg Arg Gly Arg Gly His Arg
 370 375 380
 Met Gln His Leu Ser Glu Gly Thr Lys Gly Arg Gln Val Gly Ser Gly
 385 390 395 400
 Gly Asp Gly Glu Arg Trp Gly Ser Asp Arg Gly Ser Arg Gly Ser Leu
 405 410 415
 Asn Glu Gln Ile Ala Leu Val Leu Met Arg Leu Gln Glu Asp Met Gln
 420 425 430
 Asn Val Leu Gln Arg Leu Gln Lys Leu Glu Thr Leu Thr Ala Leu Gln
 435 440 445
 Ala Lys Ser Ser Thr Ser Thr Leu Gln Thr Ala Pro Gln Pro Thr Ser
 450 455 460
 Gln Arg Pro Ser Trp Trp Pro Phe Glu Met Pro Ser Arg
 465 470 475

<210> 25
 <211> 1401
 <212> DNA
 <213> Homo sapiens

<400> 25
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 gcttggagtt cactgggtga tatgaccaa ggggaagcca tgattgcata tgttgaagaa 240
 atgaaaaaga ttattgaaac tatgccaatg actgagaaag ttgaagaatt gctgcgtgtc 300
 ataggtccat tttatgaaat tgtcgaggac aaaaagagtgc gcaggagttc tgatataacc 360
 tcagtccgac tggagaaaaat ctctaaatgt ttagaagatc ttggtaatgt tctcacttct 420
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 gaggaagaag agggccaaga agaagtgaag ggagcagaac aaagtgataa tgataagaaa 540
 atgatgaaga agtcagcaga ccataagaat ttggaagtca ttgtcactaa tggctatgat 600
 aaagatggct ttgttcagga tatacagaat gacattcatg ccagttcttc cctgaatggc 660
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 gtttgcattc accaagatat aaatgatgat catgttgaag atgttacagg aattcagcat 780
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<210> 26
 <211> 466
 <212> PRT
 <213> Homo sapiens

<400> 26
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 20 25 30
 Ser Phe Tyr Lys Gln Ala Thr Glu Gly Pro Cys Lys Leu Ser Arg Pro
 35 40 45
 Gly Phe Trp Asp Pro Ile Gly Arg Tyr Lys Trp Asp Ala Trp Ser Ser
 50 55 60
 Leu Gly Asp Met Thr Lys Gly Glu Ala Met Ile Ala Tyr Val Glu Glu
 65 70 75 80
 Met Lys Lys Ile Ile Glu Thr Met Pro Met Thr Glu Lys Val Glu Glu
 85 90 95

Leu Leu Arg Val Ile Gly Pro Phe Tyr Glu Ile Val Glu Asp Lys Lys
 100 105 110
 Ser Gly Arg Ser Ser Asp Ile Thr Ser Val Arg Leu Glu Lys Ile Ser
 115 120 125
 Lys Cys Leu Glu Asp Leu Gly Asn Val Leu Thr Ser Thr Pro Asn Ala
 130 135 140
 Lys Thr Val Asn Gly Lys Ala Glu Ser Ser Asp Ser Gly Ala Glu Ser
 145 150 155 160
 Glu Glu Glu Glu Ala Gln Glu Glu Val Lys Gly Ala Glu Gln Ser Asp
 165 170 175
 Asn Asp Lys Lys Met Met Lys Lys Ser Ala Asp His Lys Asn Leu Glu
 180 185 190
 Val Ile Val Thr Asn Gly Tyr Asp Lys Asp Gly Phe Val Gln Asp Ile
 195 200 205
 Gln Asn Asp Ile His Ala Ser Ser Ser Leu Asn Gly Arg Ser Thr Glu
 210 215 220
 Glu Val Lys Pro Ile Asp Glu Asn Leu Gly Gln Thr Gly Lys Ser Ala
 225 230 235 240
 Val Cys Ile His Gln Asp Ile Asn Asp Asp His Val Glu Asp Val Thr
 245 250 255
 Gly Ile Gln His Leu Thr Ser Asp Ser Asp Ser Glu Val Tyr Cys Asp
 260 265 270
 Ser Met Glu Gln Phe Gly Gln Glu Glu Ser Leu Asp Ser Phe Thr Ser
 275 280 285
 Asn Asn Gly Pro Phe Gln Tyr Tyr Leu Gly Gly His Ser Ser Gln Pro
 290 295 300
 Met Glu Asn Ser Gly Phe Arg Glu Tyr Ile Gln Val Pro Pro Gly Asn
 305 310 315 320
 Asn Ile Gly Asn Met Gln Val Val Ala Val Glu Gly Lys Gly Glu Val
 325 330 335
 Lys His Gly Gly Glu Asp Gly Arg Asn Asn Ser Gly Ala Pro His Arg
 340 345 350
 Glu Lys Arg Gly Gly Glu Thr Asp Glu Phe Ser Asn Val Arg Arg Gly
 355 360 365
 Arg Gly His Arg Met Gln His Leu Ser Glu Gly Thr Lys Gly Arg Gln
 370 375 380
 Val Gly Ser Gly Gly Asp Gly Glu Arg Trp Gly Ser Asp Arg Gly Ser
 385 390 395 400

Arg Gly Ser Leu Asn Glu Gln Ile Ala Leu Val Leu Met Arg Leu Gln
 405 410 415

Glu Asp Met Gln Asn Val Leu Gln Arg Leu Gln Lys Leu Glu Thr Leu
 420 425 430

Thr Ala Leu Gln Ala Lys Ser Ser Thr Ser Thr Leu Gln Thr Ala Pro
 435 440 445

Gln Pro Thr Ser Gln Arg Pro Ser Trp Trp Pro Phe Glu Met Ser Pro
 450 455 460

Leu Glu
 465

<210> 27
 <211> 1401
 <212> DNA
 <213> Homo sapiens

<400> 27
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 ggaccctgta aactttcaag gcctggattt tgggatcccta ttggaagata taaatgggat 180
 gcttgaggatt cactgggtga tatgaccaa gaggaagcca tgattgcata tgttgaagaa 240
 atgaaaaaga ttattgaaac tatgccaatg actgagaaag ttgaagaatt gctgcgtgtc 300
 ataggtccat tttatgaaat tgctgaggac aaaaagagtg gcaggagttc tgatataacc 360
 tcagtccgac tggagaaaaat ctctaaatgt ttagaagatc ttggtaatgt tctcacttct 420
 actccaaacg ccaaaaccgt taatggtaaa gctgaaagca gtgacagtgg agccgagtct 480
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 atgatgaaga agtcagcaga ccataagaat ttggaagtca ttgtcactaa tggctatgat 600
 aaagatggct ttgttcagga tatacagaat gacattcatg ccagttcttc cctgaatggc 660
 agaagcactg aagaagtaaa gcctattgat gaaaacttgg ggcaaactgg aaaatctgct 720
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 cagaatgtcc ttcagagact gcagaaactg gaaacgctga ctgctttgca ggcaaaatca 1320
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 ttcgagatgt ctctctcga g 1401

<210> 28
 <211> 465
 <212> PRT
 <213> Homo sapiens

<400> 28
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Lys Asn Gly Ser Phe Gln Pro Thr Asn Glu Met Met Leu Lys Phe Tyr
 20 25 30
 Ser Phe Tyr Lys Gln Ala Thr Glu Gly Pro Cys Lys Leu Ser Arg Pro
 35 40 45
 Gly Phe Trp Asp Pro Ile Gly Arg Tyr Lys Trp Asp Ala Trp Ser Ser
 50 55 60
 Leu Gly Asp Met Thr Lys Glu Glu Ala Met Ile Ala Tyr Val Glu Glu
 65 70 75 80
 Met Lys Lys Ile Ile Glu Thr Met Pro Met Thr Glu Lys Val Glu Glu
 85 90 95
 Leu Leu Arg Val Ile Gly Pro Phe Tyr Glu Ile Val Glu Asp Lys Lys
 100 105 110
 Ser Gly Arg Ser Ser Asp Ile Thr Ser Val Arg Leu Glu Lys Ile Ser
 115 120 125
 Lys Cys Leu Glu Asp Leu Gly Asn Val Leu Thr Ser Thr Pro Asn Ala
 130 135 140
 Lys Thr Val Asn Gly Lys Ala Glu Ser Ser Asp Ser Gly Ala Glu Ser
 145 150 155 160
 Glu Glu Glu Ala Gln Glu Glu Val Lys Gly Ala Glu Gln Ser Asp Asn
 165 170 175
 Asp Lys Lys Met Met Lys Lys Ser Ala Asp His Lys Asn Leu Glu Val
 180 185 190
 Ile Val Thr Asn Gly Tyr Asp Lys Asp Gly Phe Val Gln Asp Ile Gln
 195 200 205
 Asn Asp Ile His Ala Ser Ser Ser Leu Asn Gly Arg Ser Thr Glu Glu
 210 215 220
 Val Lys Pro Ile Asp Glu Asn Leu Gly Gln Thr Gly Lys Ser Ala Val
 225 230 235 240
 Cys Ile His Gln Asp Ile Asn Asp Asp His Val Glu Asp Val Thr Gly
 245 250 255
 Ile Gln His Leu Thr Ser Asp Ser Asp Ser Glu Val Tyr Cys Asp Ser
 260 265 270
 Met Glu Gln Phe Gly Gln Glu Glu Ser Leu Asp Ser Phe Thr Ser Asn
 275 280 285
 Asn Gly Gln Phe Gln Tyr Tyr Leu Gly Gly His Ser Ser Gln Pro Met
 290 295 300
 Glu Asn Ser Gly Phe Arg Glu Asp Ile Gln Val Pro Pro Gly Asn Asn
 305 310 315 320

Ile Gly Asn Met Gln Val Val Ala Val Glu Gly Lys Gly Glu Val Lys
325 330 335

His Gly Gly Glu Asp Gly Arg Asn Asn Ser Gly Ala Pro His Arg Glu
340 345 350

Lys Arg Gly Gly Glu Thr Asp Glu Phe Ser Asn Val Arg Arg Gly Arg
355 360 365

Gly His Arg Met Gln His Leu Ser Glu Gly Thr Lys Gly Arg Gln Val
370 375 380

Gly Ser Gly Gly Asp Gly Glu Arg Trp Gly Ser Asp Arg Gly Ser Arg
385 390 395 400

Gly Ser Leu Asn Glu Gln Ile Ala Leu Val Leu Met Arg Leu Gln Glu
405 410 415

Asp Met Gln Asn Val Leu Gln Arg Leu Gln Lys Leu Glu Thr Leu Thr
420 425 430

Ala Leu Gln Ala Lys Ser Ser Thr Ser Thr Leu Gln Thr Ala Pro Gln
435 440 445

Pro Thr Ser Gln Arg Pro Ser Trp Trp Pro Phe Glu Met Ser Pro Leu
450 455 460

Glu
465

<210> 29
<211> 1401
<212> DNA
<213> Homo sapiens

<400> 29
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ggaccctgta aactttcaag gcctggattt tgggaccta ttggaagata taaatgggat 180
gcttggagtt cactgggtga tatgaccaa gaggaagcca tgattgcata tgttgaagaa 240
atgaaaaaga ttattgaaac tatgccaatg actgagaaag ttgaagaatt gctgcgtgtc 300
ataggtccat tttatgaaat tgctgaggac aaaaagagtg gcaggagttc tgatataacc 360
tcagtccgac tggagaaaat ctctaaatgt ttagaagatc ttggtaatgt tctcacttct 420
actccaaacg ccaaaaccgt taatggtaaa gctgaaagca gtgacagtgg agccgagtct 480
gaggaagaag aggcccaaga agaagtgaaa ggagcagaac aaagtataa tgataagaaa 540
atgatgaaga agtcagcaga ccataagaat ttggaagtca ttgtcactaa tggctatgat 600
aaagatggct ttgttcagga tatacagaat gacattcatg ccagttcttc cctgaatggc 660
agaagcactg aagaagtaaa gccattgat gaaaacttgg ggcaaactgg aaaatctgct 720
gtttgcattc accaagatat aaatgatgat catgttgaag atgttacagg aattcagcat 780
ttgacaagcg attcagacag tgaagtttac tgtgattcta tggacaatt tggacaagaa 840
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accaaggggcc ggcaggtggg aagtggaggt gatgggggagc gctgggggctc cgacagaggg 1200
 tcccgaggca gcctcaatga gcagatcgcc ctcgtgctga tgagactgca ggaggacatg 1260
 cagaatgtcc ttcagagact gcagaaactg gaaacgctga ctgctttgca ggcaaaatca 1320
 tcaacatcaa cattgcagac tgctcctcag cccacctcac agagaccatc ttggtggccc 1380
 ttcgagatgt ctcctctcga g 1401

<210> 30
 <211> 440
 <212> PRT
 <213> Homo sapiens

<400> 30
 Lys Leu Thr Arg Phe Glu Ala Ala Val Lys Val Ile Gln Ser Leu Pro
 1 5 10 15
 Lys Asn Gly Ser Phe Gln Pro Thr Asn Glu Met Met Leu Lys Phe Tyr
 20 25 30
 Ser Phe Tyr Lys Gln Ala Thr Glu Gly Pro Cys Lys Leu Ser Arg Pro
 35 40 45
 Gly Phe Trp Asp Pro Ile Gly Arg Tyr Lys Trp Asp Ala Trp Ser Ser
 50 55 60
 Leu Gly Asp Met Thr Lys Glu Glu Ala Met Ile Ala Tyr Val Glu Glu
 65 70 75 80
 Met Lys Lys Ile Ile Glu Thr Met Pro Met Thr Glu Lys Val Glu Glu
 85 90 95
 Leu Leu Arg Val Ile Gly Pro Phe Tyr Glu Ile Val Glu Asp Lys Lys
 100 105 110
 Ser Gly Arg Ser Ser Asp Ile Thr Ser Val Arg Leu Glu Lys Ile Ser
 115 120 125
 Lys Cys Leu Glu Asp Leu Glu Glu Glu Glu Ala Gln Glu Glu Val Lys
 130 135 140
 Gly Ala Glu Gln Ser Asp Asn Asp Lys Lys Met Met Lys Lys Ser Ala
 145 150 155 160
 Asp His Lys Asn Leu Glu Val Ile Val Thr Asn Gly Tyr Asp Lys Asp
 165 170 175
 Gly Phe Val Gln Asp Ile Gln Asn Asp Ile His Ala Ser Ser Ser Leu
 180 185 190
 Asn Gly Arg Ser Thr Glu Glu Val Lys Pro Ile Asp Glu Asn Leu Gly
 195 200 205
 Gln Thr Gly Lys Ser Ala Val Cys Ile His Gln Asp Ile Asn Asp Asp
 210 215 220
 His Val Glu Asp Val Thr Gly Ile Gln His Leu Thr Ser Asp Ser Asp
 225 230 235 240

Ser Glu Val Tyr Cys Asp Ser Met Glu Gln Phe Gly Gln Glu Glu Ser
 245 250 255
 Leu Asp Ser Phe Thr Ser Asn Asn Gly Pro Phe Gln Tyr Tyr Leu Gly
 260 265 270
 Gly His Ser Ser Gln Pro Met Glu Asn Ser Gly Phe Arg Glu Asp Ile
 275 280 285
 Gln Val Pro Pro Gly Asn Asn Ile Gly Asn Met Gln Val Val Ala Val
 290 295 300
 Glu Gly Lys Gly Glu Val Lys His Gly Gly Glu Asp Gly Arg Asn Asn
 305 310 315 320
 Ser Gly Ala Pro His Arg Glu Lys Arg Gly Gly Glu Thr Asp Glu Phe
 325 330 335
 Ser Asn Val Arg Arg Gly Arg Gly His Arg Met Gln His Leu Ser Glu
 340 345 350
 Gly Thr Lys Gly Arg Gln Val Gly Ser Gly Gly Asp Gly Glu Arg Trp
 355 360 365
 Gly Ser Asp Arg Gly Ser Arg Gly Ser Leu Asn Glu Gln Ile Ala Leu
 370 375 380
 Val Leu Met Arg Leu Gln Glu Asp Met Gln Asn Val Leu Gln Arg Leu
 385 390 395 400
 Gln Lys Leu Glu Thr Leu Thr Ala Leu Gln Ala Lys Ser Ser Thr Ser
 405 410 415
 Thr Leu Gln Thr Ala Pro Gln Pro Thr Ser Gln Arg Pro Ser Trp Trp
 420 425 430
 Pro Phe Glu Met Ser Pro Leu Glu
 435 440

<210> 31
 <211> 1368
 <212> DNA
 <213> Homo sapiens

<400> 31
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 ttccagccaa caaatgaaat gatgcttaaa ttttatagct tctataagca ggcaactgaa 120
 ggaccctgta aactttcaag gcctggattt tgggataccta ttggaagata taaatgggat 180
 gcttggaggt cactgggtga tatgaccaa gaggaagcca tgattgcata tgttgaagaa 240
 atgaaaaaga ttattgaaac tatgccaatg actgagaaag ttgaagaatt gctgcgtgtc 300
 atagggtccat tttatgaaat tgtcgaggac aaaaagagtg gcaggagttc tgatataacc 360
 tcagatcttg gtaatgttct cacttctact ccgaacgcca aaaccgttaa tggtaaagct 420
 gaaagcagtg acagtggagc cgagtctgag gaagaagagg cccaagaaga agtgaaagga 480
 gcagaacaaa gtgataatga taagaaaatg atgaagaagt cagcagacca taagaatttg 540
 gaagtcattg tcactaatgg ctatgataaa gatggctttg ttcaggatat acagaatgac 600

```

attcatgccca gttcttccct gaatggcaga agcactgaag aagtaaagcc cattgatgaa 660
aacttggggc aaactggaaa atctgctgtt tgcattcacc aagatataaa tgatgatcat 720
gttgaagatg ttacaggaat tcagcatttg acgagcgatt cagacagtga agtttactgt 780
gattctatgg aacaatttgg acaagaagag tctttagaca gctttacgtc caacaatgga 840
ccatttcagt attacttggg tggtcattcc agtcaaccca tggaaaattc tggatttcgt 900
gaagatattc aagtacctcc tggaaatggc aacattggga atatgcaggt ggttgcagtt 960
gaaggaaaag gcgaagtcaa gcatggagga gaagatggca ggaataacag cggagcacca 1020
caccgggaga agcgaggcgg agaaactgac gaattctcta atgttagaag aggaagagga 1080
cataggatgc aacacttgag cgaaggaacc aagggccggc aggtgggaag tggaggtgat 1140
ggggagcgct ggggctccga cagaggggtcc cgaggcagcc tcaatgagca gatcgccctc 1200
gtgctgatga gactgcagga ggacatacag aatgtccttc agagactgca gaaactggaa 1260
acgctgactg ctttgcaggc aaaatcatca acatcaacat tgcagactgc tcctcagccc 1320
acctcacaga gatcatcttg gtggcccttc gagatgtctc ctctcgag 1368

```

<210> 32

<211> 453

<212> PRT

<213> Homo sapiens

<400> 32

```

Lys Leu Thr Arg Phe Glu Ala Ala Val Lys Val Ile Gln Ser Leu Pro
  1             5             10             15

```

```

Lys Asn Gly Ser Phe Gln Pro Thr Asn Glu Met Met Leu Lys Phe Tyr
      20             25             30

```

```

Ser Phe Tyr Lys Gln Ala Thr Glu Gly Pro Cys Lys Leu Ser Arg Pro
      35             40             45

```

```

Gly Phe Trp Asp Pro Ile Gly Arg Tyr Lys Trp Asp Ala Trp Ser Ser
      50             55             60

```

```

Leu Gly Asp Met Thr Lys Glu Glu Ala Met Ile Ala Tyr Val Glu Glu
      65             70             75             80

```

```

Met Lys Lys Ile Ile Glu Thr Met Pro Met Thr Glu Lys Val Glu Glu
      85             90             95

```

```

Leu Leu Arg Val Ile Gly Pro Phe Tyr Glu Ile Val Glu Asp Lys Lys
      100            105            110

```

```

Ser Gly Arg Ser Ser Asp Ile Thr Ser Asp Leu Gly Asn Val Leu Thr
      115            120            125

```

```

Ser Thr Pro Asn Ala Lys Thr Val Asn Gly Lys Ala Glu Ser Ser Asp
      130            135            140

```

```

Ser Gly Ala Glu Ser Glu Glu Glu Glu Ala Gln Glu Glu Val Lys Gly
      145            150            155            160

```

```

Glu Gln Ser Asp Asn Asp Lys Lys Met Met Lys Lys Ser Ala Asp His
      165            170            175

```

```

Lys Asn Leu Glu Val Ile Val Thr Asn Gly Tyr Asp Lys Asp Gly Phe
      180            185            190

```

Val Gln Asp Ile Gln Asn Asp Ile His Ala Ser Ser Ser Leu Asn Gly
195 200 205
Arg Ser Thr Glu Glu Val Lys Pro Ile Asp Glu Asn Leu Gly Gln Thr
210 215 220
Gly Lys Ser Ala Val Cys Ile His Gln Asp Ile Asn Asp Asp His Glu
225 230 235 240
Asp Val Thr Gly Ile Gln His Leu Thr Ser Asp Ser Asp Ser Glu Val
245 250 255
Tyr Cys Asp Ser Met Glu Gln Phe Gly Gln Glu Glu Ser Leu Asp Ser
260 265 270
Phe Thr Ser Asn Asn Gly Pro Phe Gln Tyr Tyr Leu Gly Gly His Ser
275 280 285
Ser Gln Pro Met Glu Asn Ser Gly Phe Arg Glu Asp Ile Gln Val Pro
290 295 300
Pro Gly Asn Gly Asn Ile Gly Asn Met Gln Val Val Ala Val Gly Lys
305 310 315 320
Gly Glu Val Lys His Gly Gly Glu Asp Gly Arg Asn Asn Ser Gly Ala
325 330 335
Pro His Arg Glu Lys Arg Gly Gly Glu Thr Asp Glu Phe Ser Asn Val
340 345 350
Arg Arg Gly Arg Gly His Arg Met Gln His Leu Ser Glu Gly Thr Lys
355 360 365
Gly Arg Gln Val Gly Ser Gly Gly Asp Gly Glu Arg Trp Gly Ser Asp
370 375 380
Arg Gly Ser Arg Gly Ser Leu Asn Glu Gln Ile Ala Leu Val Leu Met
385 390 395 400
Arg Leu Gln Glu Asp Ile Gln Asn Val Leu Gln Arg Leu Gln Lys Leu
405 410 415
Glu Thr Leu Thr Ala Leu Gln Ala Lys Ser Ser Thr Ser Thr Leu Gln
420 425 430
Thr Ala Pro Gln Pro Thr Ser Gln Arg Ser Ser Trp Trp Pro Phe Glu
435 440 445
Met Ser Pro Leu Glu
450

<210> 33
<211> 1586
<212> DNA
<213> Homo sapiens

<400> 33

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tgattcccgc cgacagacct tgggaccggg gccaacactg gcagctggag atggcggaca 120
cgagatccgt gcacgagact aggtttgagg cggccgtgaa ggtgatccag agtttgccga 180
agaatggttc attccagcca acaaatgaaa tgatgcttaa attttatagc ttctataagc 240
aggcaactga aggaccctgt aaactttcaa ggcctggatt ttgggaccc attggaagat 300
ataaatggga tgcttggagt tcaactgggtg atatgaccaa agaggaagcc atgattgcat 360
atgttgaaga aatgaaaaag attattgaaa ctatgccaat gactgagaaa gttgaagaat 420
tgctgcgtgt cataggtcca ttttatgaaa ttgtcgagga caaaaagagt ggcaggagtt 480
ctgatataac ctcagatctt ggtaatgttc tcaacttctac tccgaacgcc aaaaccgtta 540
atggtaaagc tgaaagcagt gacagtggag ccgagtctga ggaagaagag gcccaagaag 600
aagtgaagag agcagaacaa agtgataatg ataagaaaat gatgaagaag tcagcagacc 660
ataagaattht ggaagtcatt gtcactaatg gctatgataa agatggcttt gttcaggata 720
tacagaatga cattcatgcc agttcttccc tgaatggcag aagcactgaa gaagtaaagc 780
ccattgatga aaacttgggg caaactggaa aatctgctgt ttgcattcac caagatataa 840
atgatgatca tgttgaagat gttacaggaa ttcagcattt gacaagcgat tcagacagt 900
aagtttactg tgattctatg gaacaatttg gacaagaaga gtcttttagac agctttacgt 960
ccaacaatgg accatttcag tattacttgg gtggtcattc cagtcaaccc atggaaaatt 1020
ctggatttgc tgaagatatt caagtacctc ctggaaatgg caacattggg aatatgcagg 1080
tggttgcagt tgaaggaaaa ggtgaagtca agcatggagg agaagatggc aggaataaca 1140
gcggagcacc acaccgggag aagcgaggcg gagaaactga cgaattctct aatgttagaa 1200
gaggaagagg acataggatg caacacttga gcgaaggaa caagggccgg caggtgggaa 1260
gtggagggtga tggggagcgc tggggctccg acagaggggc ccgaggcagc ctcaatgagc 1320
agatcgccct cgtgctgatg agactgcagg aggacatgca gaatgtcctt cagagactgc 1380
agaaactgga aacgctgact gctttgcagg caaaatcatc aacatcaaca ttgcagactg 1440
ctcctcagcc cacctcacag agaccatctt ggtggccctt cgagatgtct cctgggtgtg 1500
taacgtttgc catcatatgg ccttttattg cacagtgggt ggtgtattta tactatcaaa 1560
gaaggagaag aaaactgaac ctcgag 1586
```

<210> 34

<211> 528

<212> PRT

<213> Homo sapiens

<400> 34

```
Ala Ser Thr Met Phe Gln Phe His Ala Gly Ser Trp Glu Ser Trp Cys
 1             5             10             15

Cys Cys Cys Leu Ile Pro Ala Asp Arg Pro Trp Asp Arg Gly Gln His
 20             25             30

Trp Gln Leu Glu Met Ala Asp Thr Arg Ser Val His Glu Thr Arg Phe
 35             40             45

Glu Ala Ala Val Lys Val Ile Gln Ser Leu Pro Lys Asn Gly Ser Phe
 50             55             60

Gln Pro Thr Asn Glu Met Met Leu Lys Phe Tyr Ser Phe Tyr Lys Gln
 65             70             75             80

Ala Thr Glu Gly Pro Cys Lys Leu Ser Arg Pro Gly Phe Trp Asp Pro
 85             90             95

Ile Gly Arg Tyr Lys Trp Asp Ala Trp Ser Ser Leu Gly Asp Met Thr
100            105            110
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Lys Glu Glu Ala Met Ile Ala Tyr Val Glu Glu Met Lys Lys Ile Ile
 115 120 125
 Glu Thr Met Pro Met Thr Glu Lys Val Glu Glu Leu Leu Arg Val Ile
 130 135 140
 Gly Pro Phe Tyr Glu Ile Val Glu Asp Lys Lys Ser Gly Arg Ser Ser
 145 150 155 160
 Asp Ile Thr Ser Asp Leu Gly Asn Val Leu Thr Ser Thr Pro Asn Ala
 165 170 175
 Lys Thr Val Asn Gly Lys Ala Glu Ser Ser Asp Ser Gly Ala Glu Ser
 180 185 190
 Glu Glu Glu Glu Ala Gln Glu Glu Val Lys Gly Ala Glu Gln Ser Asp
 195 200 205
 Asn Asp Lys Lys Met Met Lys Lys Ser Ala Asp His Lys Asn Leu Glu
 210 215 220
 Val Ile Val Thr Asn Gly Tyr Asp Lys Asp Gly Phe Val Gln Asp Ile
 225 230 235 240
 Gln Asn Asp Ile His Ala Ser Ser Ser Leu Asn Gly Arg Ser Thr Glu
 245 250 255
 Glu Val Lys Pro Ile Asp Glu Asn Leu Gly Gln Thr Gly Lys Ser Ala
 260 265 270
 Val Cys Ile His Gln Asp Ile Asn Asp Asp His Val Glu Asp Val Thr
 275 280 285
 Gly Ile Gln His Leu Thr Ser Asp Ser Asp Ser Glu Val Tyr Cys Asp
 290 295 300
 Ser Met Glu Gln Phe Gly Gln Glu Glu Ser Leu Asp Ser Phe Thr Ser
 305 310 315 320
 Asn Asn Gly Pro Phe Gln Tyr Tyr Leu Gly Gly His Ser Ser Gln Pro
 325 330 335
 Met Glu Asn Ser Gly Phe Arg Glu Asp Ile Gln Val Pro Pro Gly Asn
 340 345 350
 Gly Asn Ile Gly Asn Met Gln Val Val Ala Val Glu Gly Lys Gly Glu
 355 360 365
 Val Lys His Gly Gly Glu Asp Gly Arg Asn Asn Ser Gly Ala Pro His
 370 375 380
 Arg Glu Lys Arg Gly Gly Glu Thr Asp Glu Phe Ser Asn Val Arg Arg
 385 390 395 400
 Gly Arg Gly His Arg Met Gln His Leu Ser Glu Gly Thr Lys Gly Arg
 405 410 415

Gln Val Gly Ser Gly Gly Asp Gly Glu Arg Trp Gly Ser Asp Arg Gly
 420 425 430
 Ser Arg Gly Ser Leu Asn Glu Gln Ile Ala Leu Val Leu Met Arg Leu
 435 440 445
 Gln Glu Asp Met Gln Asn Val Leu Gln Arg Leu Gln Lys Leu Glu Thr
 450 455 460
 Leu Thr Ala Leu Gln Ala Lys Ser Ser Thr Ser Thr Leu Gln Thr Ala
 465 470 475 480
 Pro Gln Pro Thr Ser Gln Arg Pro Ser Trp Trp Pro Phe Glu Met Ser
 485 490 495
 Pro Gly Val Leu Thr Phe Ala Ile Ile Trp Pro Phe Ile Ala Gln Trp
 500 505 510
 Leu Val Tyr Leu Tyr Tyr Gln Arg Arg Arg Arg Lys Leu Asn Leu Glu
 515 520 525

<210> 35
 <211> 1618
 <212> DNA
 <213> Homo sapiens

<400> 35
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 gagatccgtg caccagacta ggtttgaggg ggccgtgaag gtgatccaga gtttgccgaa 180
 gaatggttca ttccagccaa caaatgaaat gatgcttaaa ttttatagct tctataagca 240
 ggcaactgaa ggaccctgta aactttcaag gcctggattt tgggaccta ttggaagata 300
 taaatgggat gcttgaggtt cactgggtga tatgaccaa gaggaagcca tgattgcata 360
 tgttgaagaa atgaaaaaga ttattgaaac tatgccaatg actgagaaag ttgaagaatt 420
 gctgcgtgtc ataggtccat tttatgaaat tgtcaggagc aaaaagagtgc gcaggagttc 480
 tgatataacc tcagtccgac tggagaaaat ctctaaatgt ttagaagatc ttggtaatgt 540
 tctcacttct actccaaacg ccaaaaccgt taatggtaaa gctgaaggca gtgacagtgg 600
 agccgagtct gaggaagaag aggcccaaga agaagtgaaa ggagcagaac aaagtgataa 660
 tgataagaaa atgatgaaga agtcagcaga ccataagaat ttggaagtca ttgtcactaa 720
 tggctatgat aaagatggct ttgttcagga tatacagaat gacattcatg ccagttcttc 780
 cctgaatggc agaagcactg aagaagtaaa gccattgat gaaaacttgg ggcaactgg 840
 aaaatctgct gtttgcatc accaagatat aaatgatgat catgttgaag atgttacagg 900
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 ttggtggccc ttcgagatgt ctctggtgt gctaacgttt gccatcatat ggccttttat 1560

tgacacagtgg ttggtgtatt tatactatca aagaaggaga agaaaaactga acctcgag 1618

<210> 36
 <211> 539
 <212> PRT
 <213> Homo sapiens

<400> 36
 Ser Phe His His Val Pro Val Ser Cys Arg Leu Leu Gly Lys Leu Val
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 20 25 30
 Trp Gln Leu Glu Met Ala Asp Thr Arg Ser Val His Glu Thr Arg Phe
 35 40 45
 Glu Ala Ala Val Lys Val Ile Gln Ser Leu Pro Lys Asn Gly Ser Phe
 50 55 60
 Gln Pro Thr Asn Glu Met Met Leu Lys Phe Tyr Ser Phe Tyr Lys Gln
 65 70 75 80
 Ala Thr Glu Gly Pro Cys Lys Leu Ser Arg Pro Gly Phe Trp Asp Pro
 85 90 95
 Ile Gly Arg Tyr Lys Trp Asp Ala Trp Ser Ser Leu Gly Asp Met Thr
 100 105 110
 Lys Glu Glu Ala Met Ile Ala Tyr Val Glu Glu Met Lys Lys Ile Ile
 115 120 125
 Glu Thr Met Pro Met Thr Glu Lys Val Glu Glu Leu Leu Arg Val Ile
 130 135 140
 Gly Pro Phe Tyr Glu Ile Val Glu Asp Lys Lys Ser Gly Arg Ser Ser
 145 150 155 160
 Asp Ile Thr Ser Val Arg Leu Glu Lys Ile Ser Lys Cys Leu Glu Asp
 165 170 175
 Leu Gly Asn Val Leu Thr Ser Thr Pro Asn Ala Lys Thr Val Asn Gly
 180 185 190
 Lys Ala Glu Gly Ser Asp Ser Gly Ala Glu Ser Glu Glu Glu Ala
 195 200 205
 Gln Glu Glu Val Lys Gly Ala Glu Gln Ser Asp Asn Asp Lys Lys Met
 210 215 220
 Met Lys Lys Ser Ala Asp His Lys Asn Leu Glu Val Ile Val Thr Asn
 225 230 235 240
 Gly Tyr Asp Lys Asp Gly Phe Val Gln Asp Ile Gln Asn Asp Ile His
 245 250 255

Ala Ser Ser Ser Leu Asn Gly Arg Ser Thr Glu Glu Val Lys Pro Ile
 260 265 270
 Asp Glu Asn Leu Gly Gln Thr Gly Lys Ser Ala Val Cys Ile His Gln
 275 280 285
 Asp Ile Asn Asp Asp His Val Glu Asp Val Thr Gly Ile Gln His Leu
 290 295 300
 Thr Ser Asp Ser Asp Ser Glu Val Tyr Cys Asp Ser Met Glu Gln Phe
 305 310 315 320
 Gly Gln Glu Glu Ser Leu Asp Ser Phe Thr Ser Asn Asn Gly Pro Phe
 325 330 335
 Gln Tyr Tyr Leu Gly Gly His Ser Ser Gln Pro Met Glu Asn Ser Gly
 340 345 350
 Phe Arg Glu Asp Ile Gln Val Pro Pro Gly Asn Gly Asn Ile Gly Asn
 355 360 365
 Met Gln Val Val Ala Val Glu Gly Lys Gly Glu Val Lys His Gly Gly
 370 375 380
 Glu Asp Gly Arg Asn Asn Ser Gly Ala Pro His Arg Glu Lys Arg Gly
 385 390 395 400
 Gly Glu Thr Asp Glu Phe Ser Asn Val Arg Arg Gly Arg Gly His Arg
 405 410 415
 Met Gln His Leu Ser Glu Gly Thr Lys Gly Arg Gln Val Gly Ser Gly
 420 425 430
 Gly Asp Gly Glu Arg Trp Gly Ser Asp Arg Gly Ser Arg Gly Ser Leu
 435 440 445
 Asn Glu Gln Ile Ala Leu Val Leu Met Arg Leu Gln Glu Asp Met Gln
 450 455 460
 Asn Val Leu Gln Arg Leu Gln Lys Leu Glu Thr Leu Thr Ala Leu Gln
 465 470 475 480
 Ala Lys Ser Ser Thr Ser Thr Leu Gln Thr Ala Pro Gln Pro Thr Ser
 485 490 495
 Gln Arg Pro Ser Trp Trp Pro Phe Glu Met Ser Pro Gly Val Leu Thr
 500 505 510
 Phe Ala Ile Ile Trp Pro Phe Ile Ala Gln Trp Leu Val Tyr Leu Tyr
 515 520 525
 Tyr Gln Arg Arg Arg Arg Lys Leu Asn Leu Glu
 530 535

<210> 37

<211> 1586

<212> DNA
 <213> Homo sapiens

<400> 37

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cgagatccgt gcacgagact aggtttgagg cggccgtgaa ggtgatccag agtttgccga 180
agaatggttc attccagcca acaaatgaaa tgatgcttaa attttatagc ttctataagc 240
aggcaactga aggaccctgt aaactttcaa ggcctggatt ttgggatcct attggaagat 300
ataaatggga tgcttggagt tcaactgggtg atatgaccaa agaggaagcc atgattgcat 360
atgttgaaaga aatgaaaaag attattgaaa ctatgccaat gactgagaaa gttgaagaat 420
tgctgcgtgt cataggcca ttttatgaaa ttgtcgagga caaaaagagt ggcaggagtt 480
ctgatataac ctcagatctt ggtaatgttc tcacttctac tccgaacgcc aaaaccgtta 540
atggtaaagc tgaaagcagt gacagtggag ccgagtctga ggaagaagag gcccaagaag 600
aagtgaagg agcagaacaa agtgataatg ataagaaaat gatgaagaag tcagcagacc 660
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tacagaatga cattcatgcc agttcttccc tgaatggcag aagcactgaa gaagtaaagc 780
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gcggagcacc acaccgggag aagcgaggcg gagaaactga cgaattctct aatgttagaa 1200
gaggaagagg acataggatg caacacttga gcgaaggaaac caagggccgg caggtgggaa 1260
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ctcctcagcc cacctcacag agaccatctt ggtggccctt cgagatgtct cctggtgtgc 1500
taacgtttgc catcatatgg ccttttattg cacagtgggt ggtgtattta tactatcaaa 1560
gaaggagaag aaaactgaac ctcgag                                     1586

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<210> 38
 <211> 528
 <212> PRT
 <213> Homo sapiens

<400> 38

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Ala Ser Thr Met Phe Gln Phe His Ala Gly Ser Trp Glu Ser Trp Cys
  1                      5                      10                      15

Cys Cys Cys Leu Ile Pro Ala Asp Arg Pro Trp Asp Arg Gly Gln His
      20                      25                      30

Trp Gln Leu Glu Met Ala Asp Thr Arg Ser Val His Glu Thr Arg Phe
      35                      40                      45

Glu Ala Ala Val Lys Val Ile Gln Ser Leu Pro Lys Asn Gly Ser Phe
      50                      55                      60

Gln Pro Thr Asn Glu Met Met Leu Lys Phe Tyr Ser Phe Tyr Lys Gln
      65                      70                      75                      80

Ala Thr Glu Gly Pro Cys Lys Leu Ser Arg Pro Gly Phe Trp Asp Pro
      85                      90                      95

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Ile Gly Arg Tyr Lys Trp Asp Ala Trp Ser Ser Leu Gly Asp Met Thr
 100 105 110
 Lys Glu Glu Ala Met Ile Ala Tyr Val Glu Glu Met Lys Lys Ile Ile
 115 120 125
 Glu Thr Met Pro Met Thr Glu Lys Val Glu Glu Leu Leu Arg Val Ile
 130 135 140
 Gly Pro Phe Tyr Glu Ile Val Glu Asp Lys Lys Ser Gly Arg Ser Ser
 145 150 155 160
 Asp Ile Thr Ser Asp Leu Gly Asn Val Leu Thr Ser Thr Pro Asn Ala
 165 170 175
 Lys Thr Val Asn Gly Lys Ala Glu Ser Ser Asp Ser Gly Ala Glu Ser
 180 185 190
 Glu Glu Glu Glu Ala Gln Glu Glu Val Lys Gly Ala Glu Gln Ser Asp
 195 200 205
 Asn Asp Lys Lys Met Met Lys Lys Ser Ala Asp His Lys Asn Leu Glu
 210 215 220
 Val Ile Val Thr Asn Gly Tyr Asp Lys Asp Gly Phe Val Gln Asp Ile
 225 230 235 240
 Gln Asn Asp Ile His Ala Ser Ser Ser Leu Asn Gly Arg Ser Thr Glu
 245 250 255
 Glu Val Lys Pro Ile Asp Glu Asn Leu Gly Gln Thr Gly Lys Ser Ala
 260 265 270
 Val Cys Ile His Gln Asp Ile Asn Asp Asp His Val Glu Asp Val Thr
 275 280 285
 Gly Ile Gln His Leu Thr Ser Asp Ser Asp Ser Glu Val Tyr Cys Asp
 290 295 300
 Ser Met Glu Gln Phe Gly Gln Glu Glu Ser Leu Asp Ser Phe Thr Ser
 305 310 315 320
 Asn Asn Gly Pro Phe Gln Tyr Tyr Leu Gly Gly His Ser Ser Gln Pro
 325 330 335
 Met Glu Asn Ser Gly Phe Arg Glu Asp Ile Gln Val Pro Pro Gly Asn
 340 345 350
 Gly Asn Ile Gly Asn Met Gln Val Val Ala Val Glu Gly Lys Gly Glu
 355 360 365
 Val Lys His Gly Gly Glu Asp Gly Arg Asn Asn Ser Gly Ala Pro His
 370 375 380
 Arg Glu Lys Arg Gly Gly Glu Thr Asp Glu Phe Ser Asn Val Arg Arg
 385 390 395 400

ccacctcaca gagaccatct tgggtggccct tcgagatgtc tcctgggtgtg ctaacgtttg 1440
 ccatcatatg gccttttatt gcacagtggg tgggtgtattt atactatcaa agaaggagaa 1500
 gaaaactgaa cctcgag 1517

<210> 40
 <211> 505
 <212> PRT
 <213> Homo sapiens

<400> 40
 Ala Ser Thr Met Phe Gln Phe His Ala Gly Ser Trp Glu Ser Trp Cys
 1 5 10 15
 Cys Cys Cys Leu Ile Pro Ala Asp Arg Pro Trp Asp Arg Gly Gln His
 20 25 30
 Trp Gln Leu Glu Met Val Asp Thr Arg Ser Val His Glu Thr Arg Phe
 35 40 45
 Glu Ala Ala Val Lys Val Ile Gln Ser Leu Pro Lys Asn Gly Ser Phe
 50 55 60
 Gln Pro Thr Asn Glu Met Met Leu Lys Phe Tyr Ser Phe Tyr Lys Gln
 65 70 75 80
 Ala Thr Glu Gly Pro Cys Lys Leu Ser Arg Pro Gly Phe Trp Asp Pro
 85 90 95
 Ile Gly Arg Tyr Lys Trp Asp Ala Trp Ser Ser Leu Gly Asp Met Thr
 100 105 110
 Lys Glu Glu Ala Met Ile Ala Tyr Val Glu Glu Val Lys Lys Ile Ile
 115 120 125
 Glu Thr Met Pro Met Thr Glu Lys Val Glu Glu Leu Leu Arg Val Ile
 130 135 140
 Gly Pro Phe Tyr Glu Ile Val Glu Asp Lys Lys Ser Gly Arg Ser Ser
 145 150 155 160
 Asp Ile Thr Ser Asp Leu Gly Asn Val Leu Thr Ser Thr Pro Asn Ala
 165 170 175
 Lys Thr Val Asn Gly Lys Ala Glu Ser Ser Asp Ser Gly Ala Glu Ser
 180 185 190
 Glu Glu Glu Glu Ala Gln Glu Glu Val Lys Gly Ala Glu Gln Ser Asp
 195 200 205
 Asn Asp Lys Lys Met Met Lys Lys Ser Ala Asp His Lys Asn Leu Glu
 210 215 220
 Val Ile Val Thr Asn Gly Tyr Asp Lys Asp Gly Phe Val Gln Asp Ile
 225 230 235 240
 Gln Asn Asp Ile His Ala Ser Ser Ser Leu Asn Gly Arg Ser Thr Glu


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aagcttccac catgttccag tttcatgcag gctcttggga aagctggtgc tgctgctgcc 60
tgattcccgc cgacagacct tgggaccggg gccaacactg gcagctggag atggcggaca 120
cgagatccgt gcacgagact aggtttgagg cggccgtgaa ggtgatccag agtttgccga 180
agaatggttc attccagcca acaaatgaaa tgatgcttaa attttatagc ttctataagc 240
aggcaactga aggaccctgt aaactttcaa ggcctggatt ttgggacccct attggaagat 300
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atgttgaaga aatgaaaaaag attattgaaa ctatgccaat gactgagaaa gttgaagaat 420
tgctgcgtgt cataggtcca ttttatgaaa ttgtcgagga caaaaagagt ggcaggagtt 480
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acagtggagc cgagtctgag gaagaagagg cccaagaaga agtgaaagga gcagaacaaa 600
gtgataatga tataaatgat gatcatgttg aagatgttac aggaattcag catttgacaa 660
gcgattcaga cagtgaagtt tactgtgatt ctatggaaca atttggacaa gaagagtctt 720
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caacattgca gactgctcct cagcccacct cacagagacc atcttggtgg cccttcgaga 1260
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<210> 42
 <211> 454
 <212> PRT
 <213> Homo sapiens

<400> 42
 Ala Ser Thr Met Phe Gln Phe His Ala Gly Ser Trp Glu Ser Trp Cys
 1 5 10 15
 Cys Cys Cys Leu Ile Pro Ala Asp Arg Pro Trp Asp Arg Gly Gln His
 20 25 30
 Trp Gln Leu Glu Met Ala Asp Thr Arg Ser Val His Glu Thr Arg Phe
 35 40 45
 Glu Ala Ala Val Lys Val Ile Gln Ser Leu Pro Lys Asn Gly Ser Phe
 50 55 60
 Gln Pro Thr Asn Glu Met Met Leu Lys Phe Tyr Ser Phe Tyr Lys Gln
 65 70 75 80
 Ala Thr Glu Gly Pro Cys Lys Leu Ser Arg Pro Gly Phe Trp Asp Pro
 85 90 95
 Ile Gly Arg Tyr Lys Trp Asp Ala Trp Ser Ser Leu Gly Asp Met Thr
 100 105 110
 Lys Glu Glu Ala Met Ile Ala Tyr Val Glu Glu Met Lys Lys Ile Ile
 115 120 125
 Glu Thr Met Pro Met Thr Glu Lys Val Glu Glu Leu Leu Arg Val Ile
 130 135 140

Gly Pro Phe Tyr Glu Ile Val Glu Asp Lys Lys Ser Gly Arg Ser Ser
 145 150 155 160
 Asp Ile Thr Ser Val Arg Leu Glu Lys Ile Ser Lys Cys Leu Glu Ala
 165 170 175
 Glu Ser Ser Asp Ser Gly Ala Glu Ser Glu Glu Glu Glu Ala Gln Glu
 180 185 190
 Glu Val Lys Gly Ala Glu Gln Ser Asp Asn Asp Ile Asn Asp Asp His
 195 200 205
 Val Glu Asp Val Thr Gly Ile Gln His Leu Thr Ser Asp Ser Asp Ser
 210 215 220
 Glu Val Tyr Cys Asp Ser Met Glu Gln Phe Gly Gln Glu Glu Ser Leu
 225 230 235 240
 Asp Ser Phe Thr Ser Asn Asn Gly Pro Phe Gln Tyr Tyr Leu Gly Gly
 245 250 255
 His Ser Ser Gln Pro Met Glu Asn Ser Gly Phe Arg Glu Asp Ile Gln
 260 265 270
 Val Pro Pro Gly Asn Gly Asn Ile Gly Asn Met Gln Val Val Ala Val
 275 280 285
 Glu Gly Lys Gly Glu Val Lys His Gly Gly Glu Asp Gly Arg Asn Asn
 290 295 300
 Ser Gly Ala Pro His Arg Glu Lys Arg Gly Gly Glu Thr Asp Glu Phe
 305 310 315 320
 Ser Asn Val Arg Arg Gly Arg Gly His Arg Met Gln His Leu Ser Glu
 325 330 335
 Gly Thr Lys Gly Arg Gln Val Gly Ser Gly Gly Asp Gly Glu Arg Trp
 340 345 350
 Gly Ser Asp Arg Gly Ser Arg Gly Ser Leu Asn Glu Gln Ile Ala Leu
 355 360 365
 Val Leu Met Arg Leu Gln Glu Asp Met Gln Asn Val Leu Gln Arg Leu
 370 375 380
 Gln Lys Leu Glu Thr Leu Thr Ala Leu Gln Ala Lys Ser Ser Thr Ser
 385 390 395 400
 Thr Leu Gln Thr Ala Pro Gln Pro Thr Ser Gln Arg Pro Ser Trp Trp
 405 410 415
 Pro Phe Glu Met Ser Pro Gly Val Leu Thr Phe Ala Ile Ile Trp Pro
 420 425 430
 Phe Ile Ala Gln Trp Leu Ala Tyr Leu Tyr Tyr Gln Arg Arg Arg Arg
 435 440 445

Lys Leu Asn Leu Glu Gly
450

<210> 43
<211> 1619
<212> DNA
<213> Homo sapiens

<400> 43
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cgagatccgt gcacgagact aggtttgagg cggccgtgaa ggtgatccag agtttgccga 180
agaatgggtc attccagcca acaaatgaaa tgatgcttaa attttatagc ttctataagc 240
aggcaactga aggaccctgt aaactttcaa ggcctggatt ttgggatcct attggaagat 300
ataaatggga tgcttggagt tcaactgggtg atatgaccaa agaggaagcc ataattgcat 360
atgttgaaga aatgaaaaag attattgaaa ctatgccaat gactgagaaa gttgaagaat 420
tgctgcgtgt catagggtcca ttttatgaaa ttgtcgagga caaaaagagt ggcaggagt 480
ctgatataac ctcatgccga ctggagaaaa tctctaaatg tttagaagat cttggtaatg 540
ttctcacttc tactccgaac gccaaaaccg ttaatggtaa agctgaaagc agtgacagt 600
gagccgagtc tgaggaagaa gaggcccaag aagaagtgaagg aggcagagaa caaagtgata 660
atgataagaa aatgatgaag aagtcagcag accataagaa tttggaagtc attgtcacta 720
atggctatga taaagatggc tttgttcagg atatacagaa tgacattcat gccagttctt 780
ccctgaatgg cagaagcact gaagaagtaa agccattga tgaaaacttg gggcaaactg 840
gaaaatctgc tgtttgcat caccaagata taaatgatga tcatgttgaa gatgttacag 900
gaattcagca tttgacaagc gattcagaca gtgaagttta ctgtgattct atggaacaat 960
ttggacaaga agagtcttta gacagcttta cgtccaacaa tggaccattt cagtattact 1020
tgggtggtca ttccagtcaa cccatggaaa attctggatt tcgtgaagat attcaagtac 1080
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tcaagcatgg aggagaagat ggcaggaata acagcggagc accacaccgg gaggagcgag 1200
gcggagaaac tgacgaattc tctaattgta gaagaggaag aggacatagg atgcaacact 1260
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aggaggacat gcagaatgtc cttcagagac tgcagaaact ggaaacgctg actgctttgc 1440
aggcaaaatc atcaacatca acattgcaga ctgctcctca gccacactca cagagaccat 1500
cttggtggcc cttcgagatg tctcctggtg tgctaacggt tgccatcata tggcctttta 1560
ttgcacagtg gttggtgtat ttatactatc aaagaaggag aagaaaactg aacctcgag 1619

<210> 44
<211> 537
<212> PRT
<213> Homo sapiens

<400> 44
Ala Ser Thr Met Phe Gln Phe His Ala Gly Ser Trp Glu Ser Trp Cys
1 5 10 15
Cys Cys Cys Leu Ile Pro Ala Asp Arg Pro Trp Asp Arg Gly Gln His
20 25 30
Trp Gln Leu Glu Met Ala Asp Thr Arg Ser Val His Glu Thr Arg Phe
35 40 45
Glu Ala Ala Val Lys Val Ile Gln Ser Leu Pro Lys Asn Gly Ser Phe
50 55 60

Gln	Pro	Thr	Asn	Glu	Met	Met	Leu	Lys	Phe	Tyr	Ser	Phe	Tyr	Lys	Gln	65	70	75	80
Ala	Thr	Glu	Gly	Pro	Cys	Lys	Leu	Ser	Arg	Pro	Gly	Phe	Trp	Asp	Pro	85	90	95	
Ile	Gly	Arg	Tyr	Lys	Trp	Asp	Ala	Trp	Ser	Ser	Leu	Gly	Asp	Met	Thr	100	105	110	
Lys	Glu	Glu	Ala	Ile	Ile	Ala	Tyr	Val	Glu	Glu	Met	Lys	Lys	Ile	Ile	115	120	125	
Glu	Thr	Met	Pro	Met	Thr	Glu	Lys	Val	Glu	Glu	Leu	Leu	Arg	Val	Ile	130	135	140	
Gly	Pro	Phe	Tyr	Glu	Ile	Val	Glu	Asp	Lys	Lys	Ser	Gly	Arg	Ser	Ser	145	150	155	160
Asp	Ile	Thr	Ser	Val	Arg	Leu	Glu	Lys	Ile	Ser	Lys	Cys	Leu	Glu	Asp	165	170	175	
Leu	Gly	Asn	Val	Leu	Thr	Ser	Thr	Pro	Asn	Lys	Thr	Val	Asn	Gly	Lys	180	185	190	
Ala	Glu	Ser	Ser	Asp	Ser	Gly	Ala	Glu	Ser	Glu	Glu	Glu	Glu	Ala	Gln	195	200	205	
Glu	Glu	Val	Lys	Gly	Ala	Glu	Gln	Ser	Asp	Asn	Asp	Lys	Lys	Met	Met	210	215	220	
Lys	Lys	Ser	Ala	Asp	His	Lys	Asn	Leu	Glu	Val	Ile	Val	Thr	Asn	Gly	225	230	235	240
Tyr	Asp	Lys	Asp	Gly	Phe	Val	Gln	Asp	Ile	Gln	Asn	Asp	Ile	His	Ala	245	250	255	
Ser	Ser	Ser	Leu	Asn	Gly	Arg	Ser	Thr	Glu	Glu	Val	Lys	Pro	Ile	Asp	260	265	270	
Glu	Asn	Leu	Gly	Gln	Thr	Gly	Lys	Ser	Ala	Val	Cys	Ile	His	Gln	Asp	275	280	285	
Ile	Asn	Asp	Asp	His	Val	Glu	Asp	Val	Thr	Gly	Ile	Gln	His	Leu	Thr	290	295	300	
Ser	Asp	Ser	Asp	Ser	Glu	Val	Tyr	Cys	Asp	Ser	Met	Glu	Gln	Phe	Gly	305	310	315	320
Gln	Glu	Glu	Ser	Leu	Asp	Ser	Phe	Thr	Ser	Asn	Asn	Gly	Pro	Phe	Gln	325	330	335	
Tyr	Tyr	Leu	Gly	Gly	His	Ser	Ser	Gln	Met	Glu	Asn	Ser	Gly	Phe	Arg	340	345	350	
Glu	Asp	Ile	Gln	Val	Pro	Pro	Gly	Asn	Gly	Asn	Ile	Gly	Asn	Met	Gln	355	360	365	

Val Val Ala Val Glu Gly Lys Gly Glu Val Lys His Gly Gly Glu Asp
 370 375 380
 Gly Arg Asn Asn Ser Gly Ala Pro His Arg Glu Glu Arg Gly Gly Glu
 385 390 395 400
 Thr Asp Glu Phe Ser Asn Val Arg Arg Gly Arg Gly His Arg Met Gln
 405 410 415
 His Leu Ser Glu Gly Thr Lys Gly Arg Gln Val Gly Ser Gly Gly Asp
 420 425 430
 Gly Glu Arg Trp Gly Ser Asp Arg Gly Ser Arg Gly Ser Leu Asn Glu
 435 440 445
 His Ile Ala Leu Val Leu Met Arg Leu Gln Glu Asp Met Gln Asn Val
 450 455 460
 Leu Gln Arg Leu Gln Lys Leu Glu Thr Leu Thr Ala Leu Gln Ala Lys
 465 470 475 480
 Ser Ser Thr Ser Thr Leu Gln Thr Ala Pro Gln Pro Thr Ser Gln Arg
 485 490 495
 Pro Ser Trp Trp Pro Phe Glu Met Ser Pro Gly Val Leu Thr Phe Ala
 500 505 510
 Ile Ile Trp Pro Phe Ile Ala Gln Trp Leu Val Tyr Leu Tyr Tyr Gln
 515 520 525
 Arg Arg Arg Arg Lys Leu Asn Leu Glu
 530 535

<210> 45
 <211> 1619
 <212> DNA
 <213> Homo sapiens

<400> 45
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 tgattcccg cgcacagacct tgggaccggg gccaacactg gcagctggag atggcgagaca 120
 cgagatccgt gcacgagact aggtttgagg cggccgtgaa ggtgatccag agtttgccga 180
 agaatgggtc attccagcca acaaatgaag tgatgcttaa attttatagc ttctataagc 240
 aggcaactga aggaccctgt aaactttcaa ggccctggatt ttgggatcct attggaagat 300
 ataaatggga tgcttgagg tctactgggtg atatgaccaa agaggaagcc atgattgcat 360
 atgttgaaga aatgaaaaag attattgaaa ctatgccaat gactgagaaa gttgaagaat 420
 tgctgcgtgt cataggtcca ttttatgaaa ttgtcgagga caaaaagagt ggcaggagtt 480
 ctgatataac ctacgtccga ctggagaaaa tctctaaatg tttagaagat cttggtaatg 540
 ttctcacttc tactccaaac gccaaaaccg ttaatggtaa agctgaaagc agtgacagtg 600
 gagccgagtc tgaggaagaa gaggcccaag aagaagtga aggagcagaa caaagtata 660
 atgataagaa aatgatgaag aagtcagcag accataagaa tttggaagtc attgtcacta 720
 atggctatga taaagatggc tttgttcagg atatacagaa tgacattcat gccagttctt 780
 ccctgaatgg cagaagcact gaagaagtaa agcctattga tgaaaacttg gggcaaactg 840
 gaaaatctgc tgtttgcatt caccaagata taaatgatga tcatgttgaa gatgttacag 900
 gaattcagca tttgacaagc gattcagaca gtgaagttta ctgtgattct atggaacaat 960

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ttggacaaga agagtcttta gacagcttta cgtccaacaa tggaccattt cagtattact 1020
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ctcctggaaa tggcaacatt gggaaatagc aggtggttgc agttgaagga aaaggtgaag 1140
tcaagcatgg aggagaagat ggcaggaata acagcggagc gccacaccgg gagaagcgag 1200
gcggagaaac tgatgaattc tctaattgta gaagaggaag aggacatagg atgcaacact 1260
tgagcgaagg aaccaagggc cggcaggtgg gaagtggaga tgatggggag cgctggggct 1320
ccgacagagg gtcccagggc agcctcaatg agcagatcgc cctcgtgctg atgagactgc 1380
aggaggacat gcagaatgtc cttcagagac tgcagaaact ggaaacgctg actgctttgc 1440
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cttggtggcc cttcagatg tctcctggtg tgctaacgtt tgccatcata tggcctttta 1560
ttgcacagtg gttggtgtat ttatactatc aaagaaggag aagaaaactg aacctcgag 1619

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<210> 46
 <211> 538
 <212> PRT
 <213> Homo sapiens

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<400> 46
Ala Ser Thr Met Phe Gln Phe His Ala Gly Ser Trp Glu Ser Trp Cys
  1              5              10              15

Cys Cys Cys Leu Ile Pro Ala Asp Arg Pro Asp Arg Gly Gln His Trp
      20              25              30

Gln Leu Glu Met Ala Asp Thr Arg Ser Val His Glu Thr Arg Phe Glu
      35              40              45

Ala Ala Val Lys Val Ile Gln Ser Leu Pro Lys Asn Gly Ser Phe Gln
      50              55              60

Pro Thr Asn Glu Val Met Leu Lys Phe Tyr Ser Phe Tyr Lys Gln Ala
      65              70              75              80

Thr Glu Gly Pro Cys Lys Leu Ser Arg Pro Gly Phe Trp Asp Pro Ile
      85              90              95

Gly Arg Tyr Lys Trp Asp Ala Trp Ser Ser Leu Gly Asp Met Thr Lys
      100              105              110

Glu Glu Ala Met Ile Ala Tyr Val Glu Glu Met Lys Lys Ile Ile Glu
      115              120              125

Thr Met Pro Met Thr Glu Lys Val Glu Glu Leu Leu Arg Val Ile Gly
      130              135              140

Pro Phe Tyr Glu Ile Val Glu Asp Lys Lys Ser Gly Arg Ser Ser Asp
      145              150              155              160

Ile Thr Ser Val Arg Leu Glu Lys Ile Ser Lys Cys Leu Glu Asp Leu
      165              170              175

Gly Asn Val Leu Thr Ser Thr Pro Asn Ala Lys Thr Val Asn Gly Lys
      180              185              190

Ala Glu Ser Ser Asp Ser Gly Ala Glu Ser Glu Glu Glu Glu Ala Gln
      195              200              205

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Ala Ile Ile Trp Pro Phe Ile Ala Gln Trp Leu Val Tyr Leu Tyr Tyr
 515 520 525

Gln Arg Arg Arg Arg Lys Leu Asn Leu Glu
 530 535

<210> 47
 <211> 1619
 <212> DNA
 <213> Homo sapiens

<400> 47
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 tgattccccg cgacagacct tgggaccggg gccaacactg gcagctggag atggcggaca 120
 cgagatccgt gcacgagact aggtttgagg cggccgtgaa ggtgatccag agtttgccga 180
 agaatggttc attccagcca acaaatgaaa tgatgcttaa attttatagc ttctataagc 240
 aggcaactga aggaccctgt aaactttcaa ggcctggatt ttgggatcct attggaagat 300
 ataaatggga tgcttggagt tcaactgggtg atatgaccaa agaggaagcc atgattgcat 360
 atgttgaaga aatgaaaaag attattgaaa ctatgccaat gactgagaaa gttgaagaat 420
 tgctgcgtgt cataggtcca ttttatgaaa ttgtcgagga caaaaagagt ggcaggagtt 480
 ctgatataac ctacgtccga ctggagaaaa tctctaaatg tttagaagat cttggtaatg 540
 ttctcacttc tactccaaac gccaaaaccg ttaatggtaa agctgaaagc agtgacagtg 600
 gagccgagtc tgaggaagaa gaggcccaag aagaagtgaaggaggagcagaa caaagtgata 660
 atgataagaa aatgatgaag aagtcagcag accataagaa tttggaagtc attgtcacta 720
 atggctatga taaagatggc tttgttcagg atatgcagaa tgacattcat gccagttctt 780
 ccctgaatgg cagaagcact gaagaagtaa ggcctattga tgaaaacttg gggcaaactg 840
 gaaaatctgc tgtttgcatt caccaagata taaatgacga tcatgttgaa gatgttacag 900
 gaattcagca tttgacaagc gattcagaca gtgaagttaa ctgtgattct atggaacaat 960
 ttggacaaga agagtcttta gacagcttta cgtccaacaa tggaccattt cagtattact 1020
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 gcggagaaaac tgatgaattc tctaattgta gaagaggaag aggacatagg atgcaacact 1260
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 aggcaaaatc atcaacatca acattgcaga ctgctcctca gccacacctc cagagaccat 1500
 cttggtggcc cttcagatg tctcctggtg tgctaacggt tgccatcata tggcctttta 1560
 ttgcacagtg gttggtgtat ttatactatc aaagaaggag aagaaaactg aacctcgag 1619

<210> 48
 <211> 538
 <212> PRT
 <213> Homo sapiens

<400> 48
 Ala Ser Thr Met Phe Gln Phe His Ala Gly Ser Trp Glu Ser Trp Cys
 1 5 10 15
 Cys Cys Cys Leu Ile Pro Ala Asp Arg Pro Asp Arg Gly Gln His Trp
 20 25 30
 Gln Leu Glu Met Ala Asp Thr Arg Ser Val His Glu Thr Arg Phe Glu
 35 40 45

Arg Glu Asp Ile Gln Val Pro Pro Gly Asn Gly Asn Ile Gly Asn Met
 355 360 365
 Gln Val Val Ala Val Glu Gly Lys Gly Glu Val Lys His Gly Gly Glu
 370 375 380
 Asp Gly Arg Asn Asn Ser Gly Ala Pro His Arg Glu Lys Arg Gly Gly
 385 390 395 400
 Glu Thr Asp Glu Phe Ser Asn Val Arg Arg Gly Arg Gly His Arg Met
 405 410 415
 Gln His Leu Ser Glu Gly Thr Lys Gly Arg Gln Val Gly Ser Gly Gly
 420 425 430
 Asp Gly Glu Arg Trp Gly Ser Asp Arg Gly Ser Arg Gly Ser Leu Asn
 435 440 445
 Glu Gln Ile Ala Leu Val Leu Met Arg Leu Gln Glu Asp Met Gln Asn
 450 455 460
 Val Leu Gln Arg Leu Gln Lys Leu Glu Thr Leu Thr Ala Leu Gln Ala
 465 470 475 480
 Lys Ser Ser Thr Ser Thr Leu Gln Thr Ala Pro Gln Pro Thr Ser Gln
 485 490 495
 Arg Pro Ser Trp Trp Pro Phe Glu Met Ser Pro Gly Val Leu Thr Phe
 500 505 510
 Ala Ile Ile Trp Pro Phe Ile Ala Gln Trp Leu Val Tyr Leu Tyr Tyr
 515 520 525
 Gln Arg Arg Arg Arg Lys Leu Asn Leu Glu
 530 535

<210> 49
 <211> 1619
 <212> DNA
 <213> Homo sapiens

<400> 49
 aagcttccac catgttccag tttcatgcag gctcttggga aagctggtgc tgctgctgcc 60
 tgattcccgc cgacagacct tgggaccggg gccaacactg gcagctggag atggcggaca 120
 cgagatccgt gcacgagact aggtttgagg cggccgtgaa ggtgatccag agtttgccga 180
 agaatggttc attccagcca acaaatgaaa tgatgcttaa attttatagc ttctataagc 240
 aggcaactga aggaccctgt aaactttcaa ggcctggatt ttgggaccc attggaagat 300
 ataaatggga tgcttggagt tcaactgggtg atatgccaa agaggaagcc atgattgcat 360
 atggtgaaga aatgaaaaag attattgaaa ctatgccaat gactgagaaa gttgaagaat 420
 tgctgcgtgt cataggtcca ttttatgaaa ttgtcgagga caaaaagagt ggcaggagtt 480
 ctgatataac ctcatgccga ctggagaaaa tctctaaatg tttagaagat cttggtaatg 540
 ttctcacttc tactccgaac gccaaaaccg ttaatggtaa agctgaaagc agtgacagtg 600
 gagccgagtc tgaggaagaa gaggcccaag aagaagtgaaggaggcagaa caaagtgata 660
 atgataagaa aatgatgaag aagtcagcag accataagaa tttggaagtc attgtcacta 720
 atggctatga taaagatggc ttgtttcagg atatacagaa tgacattcat gccagttctt 780

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ccctgaatgg cagaagcact gaagaagtaa agcccattga tgaaaacttg gggcaaactg 840
gaaaatctgc tgtttgcatt caccaagata taaatgatga tcatgttgaa gatgttacag 900
gaattcagca tttgacaagc gattcagaca gtgaagttaa ctgtgattct atggaacaat 960
ttggacaaga agagtcttta gacagcttta cgtccaacaa tggaccattt cagtattact 1020
tgggtgggtca ttccagtcaa cccatggaaa attctggatt tcgtgaagat attcaagtac 1080
ctcctggaaa tggcaacatt gggaaatatgc aggtgggtgc agttgaagga aaaggtgaag 1140
tcaagcatgg aggagaagag ggcaggaata acagcggagc accacaccgg gagaagcgag 1200
gcgagagaaac tgacgaattc tctaattgta gaagaggaag aggacatagg atgcaacacc 1260
tgagcgaagg aaccaagggc cggcaggtgg gaagtggagg tgatggggag cgctggggct 1320
ccgacagagg gtcccagggc agcctcaatg agcagatcgc cctcgtgctg atgagactgc 1380
aggaggacat gcagaatgtc cttcagagac tgcagaaact ggaaacgctg actgctttgc 1440
aggcaaaatc atcaacatca acattgcaga ctgctcctca gccacacctca cagagaccat 1500
cttggtggcc cttcgagatg tctcctggtg tgctaacggt tgccatcata tggcctttta 1560
ttgcacagtg gttggtgtat ttatactatc aaagaaggag aagaaaactg aacctcgag 1619

```

<210> 50

<211> 539

<212> PRT

<213> Homo sapiens

<400> 50

```

Ala Ser Thr Met Phe Gln Phe His Ala Gly Ser Trp Glu Ser Trp Cys
  1              5              10              15

```

```

Cys Cys Cys Leu Ile Pro Ala Asp Arg Pro Trp Asp Arg Gly Gln His
      20              25              30

```

```

Trp Gln Leu Glu Met Ala Asp Thr Arg Ser Val His Glu Thr Arg Phe
      35              40              45

```

```

Glu Ala Ala Val Lys Val Ile Gln Ser Leu Pro Lys Asn Gly Ser Phe
      50              55              60

```

```

Gln Pro Thr Asn Glu Met Met Leu Lys Phe Tyr Ser Phe Tyr Lys Gln
      65              70              75              80

```

```

Ala Thr Glu Gly Pro Cys Lys Leu Ser Arg Pro Gly Phe Trp Asp Pro
      85              90              95

```

```

Ile Gly Arg Tyr Lys Trp Asp Ala Trp Ser Ser Leu Gly Asp Met Thr
      100              105              110

```

```

Lys Glu Glu Ala Met Ile Ala Tyr Val Glu Glu Met Lys Lys Ile Ile
      115              120              125

```

```

Glu Thr Met Pro Met Thr Glu Lys Val Glu Glu Leu Leu Arg Val Ile
      130              135              140

```

```

Gly Pro Phe Tyr Glu Ile Val Glu Asp Lys Lys Ser Gly Arg Ser Ser
      145              150              155              160

```

```

Asp Ile Thr Ser Val Arg Leu Glu Lys Ile Ser Lys Cys Leu Glu Asp
      165              170              175

```

```

Leu Gly Asn Val Leu Thr Ser Thr Pro Asn Ala Lys Thr Val Asn Gly
      180              185              190

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Lys Ala Glu Ser Ser Asp Ser Gly Ala Glu Ser Glu Glu Glu Glu Ala
 195 200 205
 Gln Glu Glu Val Lys Gly Ala Glu Gln Ser Asp Asn Asp Lys Lys Met
 210 215 220
 Met Lys Lys Ser Ala Asp His Lys Asn Leu Glu Val Ile Val Thr Asn
 225 230 235 240
 Gly Tyr Asp Lys Asp Gly Phe Val Gln Asp Ile Gln Asn Asp Ile His
 245 250 255
 Ala Ser Ser Ser Leu Asn Gly Arg Ser Thr Glu Glu Val Lys Pro Ile
 260 265 270
 Asp Glu Asn Leu Gly Gln Thr Gly Lys Ser Ala Val Cys Ile His Gln
 275 280 285
 Asp Ile Asn Asp Asp His Val Glu Asp Val Thr Gly Ile Gln His Leu
 290 295 300
 Thr Ser Asp Ser Asp Ser Glu Val Tyr Cys Asp Ser Met Glu Gln Phe
 305 310 315 320
 Gly Gln Glu Glu Ser Leu Asp Ser Phe Thr Ser Asn Asn Gly Pro Phe
 325 330 335
 Gln Tyr Tyr Leu Gly Gly His Ser Ser Gln Pro Met Glu Asn Ser Gly
 340 345 350
 Phe Arg Glu Asp Ile Gln Val Pro Pro Gly Asn Gly Asn Ile Gly Asn
 355 360 365
 Met Gln Val Val Ala Val Glu Gly Lys Gly Glu Val Lys His Gly Gly
 370 375 380
 Glu Glu Gly Arg Asn Asn Ser Gly Ala Pro His Arg Glu Lys Arg Gly
 385 390 395 400
 Gly Glu Thr Asp Glu Phe Ser Asn Val Arg Arg Gly Arg Gly His Arg
 405 410 415
 Met Gln His Leu Ser Glu Gly Thr Lys Gly Arg Gln Val Gly Ser Gly
 420 425 430
 Gly Asp Gly Glu Arg Trp Gly Ser Asp Arg Gly Ser Arg Gly Ser Leu
 435 440 445
 Asn Glu Gln Ile Ala Leu Val Leu Met Arg Leu Gln Glu Asp Met Gln
 450 455 460
 Asn Val Leu Gln Arg Leu Gln Lys Leu Glu Thr Leu Thr Ala Leu Gln
 465 470 475 480
 Ala Lys Ser Ser Thr Ser Thr Leu Gln Thr Ala Pro Gln Pro Thr Ser
 485 490 495

Gln Arg Pro Ser Trp Trp Pro Phe Glu Met Ser Pro Gly Val Leu Thr
 500 505 510

Phe Ala Ile Ile Trp Pro Phe Ile Ala Gln Trp Leu Val Tyr Leu Tyr
 515 520 525

Tyr Gln Arg Arg Arg Arg Lys Leu Asn Leu Glu
 530 535

<210> 51
 <211> 1619
 <212> DNA
 <213> Homo sapiens

<400> 51
 aagcttccac catgttccag tttcatgcag gctcttggga aagctgggtgc tgctgctgcc 60
 tgattcccg cgcagagacct tgggaccggg gccaacactg gcagctggag atggcgga 120
 cgagatccgt gcacgagact aggtttgagg cgcccgtaa ggtgatccag agtttgccga 180
 agaatgggtt attccagcca acaaatgaaa tgatgcttaa attttatagc ttctataagc 240
 aggcaactga aggaccctgt aaactttcaa ggcctggatt ttgggaccc attggaagat 300
 ataaatggga tgcttggagt tctactgggtg atatgaccaa agaggaagcc atgattgcat 360
 atgttgaaga aatgaaaaag attattgaaa ctatgccaat gactgagaaa gttgaagaat 420
 tgctgcgtgt cataggtcca ttttatgaaa ttgtcgagga caaaaagagt ggcaggagt 480
 ctgatataac ctcagtccga ctggagaaaa tctctaaatg tttagaagat cttggtaatg 540
 ttctcacttc tactccgaac gccaaaaccg ttaatggtaa agctgaaagc agtgacagt 600
 gagccgagtc tgaggaagaa gaggcccaag aagaagtgaagg aggcagagaa caaagtgata 660
 atgataagaa aatgatgaag aagtcagcag accataagaa tttggaagtc attgtcacta 720
 atggctatga taaagatggc tttgttcagg atatacagaa tgacattcat gccagttctt 780
 ccctgaatgg cagaagcact gaagaagtaa agccattga tgaaaacttg gggcaaactg 840
 gaaaatctgc tgtttgcatt caccaagata taaatgatga tcatgttgaa gatgttacag 900
 gaattcagca tttgacaagc gattcagaca gtgaagttaa ctgtgattct atggaacaat 960
 ttggacaaga agagtcttta gacagcttta cgtccaacaa tggaccattt cagtattact 1020
 tgggtgggtca ttccagtcaa cccatggaaa attctggatt tcgtgaagat attcaagtac 1080
 ctcttggaat tggcaacatt gggaatatgc aggtgggtgc agttgaagga aaaggtgaag 1140
 tcaagcatgg aggagaagat ggcaggaata acagcggagc accacaccgg gagaagcgag 1200
 gcggagaaac tgacgaattc tctaatgtta gaagaggaag aggacatagg atgcaacact 1260
 tgagcgaagg aaccaagggc cggcaggtgg gaagtggagg tgatggggag cgctggggct 1320
 ccgacagagg gtcccgaggc agcctcaatg agcagatcgc cctcgtgctg atgagactgc 1380
 aggaggacat gcagaatgtc cttcagagac tgcagaaact ggaaacgctg actgctttgc 1440
 aggcaaaatc atcaacatca acattgcaga ctgctcctca gccacacctc cagagaccat 1500
 cttggtggcc cttcagatg tctcctggtg tgctaacggt tgccatcata tggcctttta 1560
 ttgcacagtg gttggtgtat ttatactatc aaagaaggag aagaaaactg aacctcgag 1619

<210> 52
 <211> 539
 <212> PRT
 <213> Homo sapiens

<400> 52
 Ala Ser Thr Met Phe Gln Phe His Ala Gly Ser Trp Glu Ser Trp Cys
 1 5 10 15
 Cys Cys Cys Leu Ile Pro Ala Asp Arg Pro Trp Asp Arg Gly Gln His
 20 25 30

Trp Gln Leu Glu Met Ala Asp Thr Arg Ser Val His Glu Thr Arg Phe
 35 40 45
 Glu Ala Ala Val Lys Val Ile Gln Ser Leu Pro Lys Asn Gly Ser Phe
 50 55 60
 Gln Pro Thr Asn Glu Met Met Leu Lys Phe Tyr Ser Phe Tyr Lys Gln
 65 70 75 80
 Ala Thr Glu Gly Pro Cys Lys Leu Ser Arg Pro Gly Phe Trp Asp Pro
 85 90 95
 Ile Gly Arg Tyr Lys Trp Asp Ala Trp Ser Ser Leu Gly Asp Met Thr
 100 105 110
 Lys Glu Glu Ala Met Ile Ala Tyr Val Glu Glu Met Lys Lys Ile Ile
 115 120 125
 Glu Thr Met Pro Met Thr Glu Lys Val Glu Glu Leu Leu Arg Val Ile
 130 135 140
 Gly Pro Phe Tyr Glu Ile Val Glu Asp Lys Lys Ser Gly Arg Ser Ser
 145 150 155 160
 Asp Ile Thr Ser Val Arg Leu Glu Lys Ile Ser Lys Cys Leu Glu Asp
 165 170 175
 Leu Gly Asn Val Leu Thr Ser Thr Pro Asn Ala Lys Thr Val Asn Gly
 180 185 190
 Lys Ala Glu Ser Ser Asp Ser Gly Ala Glu Ser Glu Glu Glu Ala
 195 200 205
 Gln Glu Glu Val Lys Gly Ala Glu Gln Ser Asp Asn Asp Lys Lys Met
 210 215 220
 Met Lys Lys Ser Ala Asp His Lys Asn Leu Glu Val Ile Val Thr Asn
 225 230 235 240
 Gly Tyr Asp Lys Asp Gly Phe Val Gln Asp Ile Gln Asn Asp Ile His
 245 250 255
 Ala Ser Ser Ser Leu Asn Gly Arg Ser Thr Glu Glu Val Lys Pro Ile
 260 265 270
 Asp Glu Asn Leu Gly Gln Thr Gly Lys Ser Ala Val Cys Ile His Gln
 275 280 285
 Asp Ile Asn Asp Asp His Val Glu Asp Val Thr Gly Ile Gln His Leu
 290 295 300
 Thr Ser Asp Ser Asp Ser Glu Val Tyr Cys Asp Ser Met Glu Gln Phe
 305 310 315 320
 Gly Gln Glu Glu Ser Leu Asp Ser Phe Thr Ser Asn Asn Gly Pro Phe
 325 330 335

Gln Tyr Tyr Leu Gly Gly His Ser Ser Gln Pro Met Glu Asn Ser Gly
 340 345 350
 Phe Arg Glu Asp Ile Gln Val Pro Pro Gly Asn Gly Asn Ile Gly Asn
 355 360 365
 Met Gln Val Val Ala Val Glu Gly Lys Gly Glu Val Lys His Gly Gly
 370 375 380
 Glu Asp Gly Arg Asn Asn Ser Gly Ala Pro His Arg Glu Lys Arg Gly
 385 390 395 400
 Gly Glu Thr Asp Glu Phe Ser Asn Val Arg Arg Gly Arg Gly His Arg
 405 410 415
 Met Gln His Leu Ser Glu Gly Thr Lys Gly Arg Gln Val Gly Ser Gly
 420 425 430
 Gly Asp Gly Glu Arg Trp Gly Ser Asp Arg Gly Ser Arg Gly Ser Leu
 435 440 445
 Asn Glu Gln Ile Ala Leu Val Leu Met Arg Leu Gln Glu Asp Met Gln
 450 455 460
 Asn Val Leu Gln Arg Leu Gln Lys Leu Glu Thr Leu Thr Ala Leu Gln
 465 470 475 480
 Ala Lys Ser Ser Thr Ser Thr Leu Gln Thr Ala Pro Gln Pro Thr Ser
 485 490 495
 Gln Arg Pro Ser Trp Trp Pro Phe Glu Met Ser Pro Gly Val Leu Thr
 500 505 510
 Phe Ala Ile Ile Trp Pro Phe Ile Ala Gln Trp Leu Val Tyr Leu Tyr
 515 520 525
 Tyr Gln Arg Arg Arg Arg Lys Leu Asn Leu Glu
 530 535

<210> 53
 <211> 1586
 <212> DNA
 <213> Homo sapiens

<400> 53
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 cgagatccgt gcacgagact aggtttgagg cggccgtgaa ggtgatccag agtttgccga 180
 agaatgggtc attccagcca acaaatgaaa tgatgcttaa attttatagc ttctataagc 240
 aggcaactga aggaccctgt aaactttcaa ggccctggatt ttgggacccct attggaagat 300
 ataaatggga tgcttgagg tcaactgggtg atatgaccaa agaggaagcc atgattgcat 360
 atgttggaaga aatgaaaaag attattgaaa ctatgccaat gactgagaaa gttgaagaat 420
 tgctgcgtgt cataggtcca ttttatgaaa ttgtcgagga caaaaagagt ggcaggagtt 480
 ctgatataac ctcagatctt ggtaatgttc tcaactctac tccaaacgcc aaaaccgtta 540
 atggtaaagc tgaaagcagt gacagtggag ccgagtctga ggaagaagag gcccaagaag 600

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aagtgaagg agcagaacaa agtgataatg ataagaaaat gatgaagaag tcagcagacc 660
ataagaattt ggaagtcatt gtcactaatg gctatgataa aaatggcttt gttcaggata 720
tacagaatga cattcatgcc agttcttccc tgaatggcag aagcactgaa gaagtaaagc 780
ccattgatga aaacttgggg caaactggaa aatctgctgt ttgcattcac caagatataa 840
atgatgatca tgttgaagat gttacaggaa ttcagcattt gacaagcgat tcagacagtg 900
aagtttactg tgattctatg gaacaatttg gacaagaaga gtctttagac agctttacgt 960
ccaacaatgg accatttcag tattacttgg gtggtcattc cagtcaaccc atggaaaatt 1020
ctggatttcg tgaagatatt caagtacctc ctggaaatgg caacattggg aatatgcagg 1080
tggttgacgt tgaaggaaaa ggtgaagtca agcatggagg agaagatggc aggaataaca 1140
gcggagcacc acaccgggag aagcgaggcg gagaaactga cgaattctct aatgttagaa 1200
gaggaagagg acataggatg caacacttga gcgaaggaac caagggccgg caggtgggaa 1260
gtggaggatga tggggagcgc tggggctccg acagagggtc cagaggcagc ctcaatgagc 1320
agatcgccct cgtgctgatg agactgcagg aggacatgca gaatgtcctt cagagactgc 1380
agaaactgga aacgctgact gctttgcagg caaaatcatc aacatcaaca ttgcagactg 1440
ctcctcagcc cacctcacag agaccatctt ggtggccctt cgagatgtct cctgggtgtgc 1500
taacgtttgc catcatatgg ccttttattg cacagtgggt ggtgtattta tactatcaaa 1560
gaaggagaag aaaactgaac ctcgag 1586

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<210> 54
 <211> 528
 <212> PRT
 <213> Homo sapiens

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<400> 54
Ala Ser Thr Met Phe Gln Phe His Ala Gly Ser Trp Glu Ser Trp Cys
 1             5             10            15

Cys Cys Cys Leu Ile Pro Ala Asp Arg Pro Trp Asp Arg Gly Gln His
 20            25            30

Trp Gln Leu Glu Met Ala Asp Thr Arg Ser Val His Glu Thr Arg Phe
 35            40            45

Glu Ala Ala Val Lys Val Ile Gln Ser Leu Pro Lys Asn Gly Ser Phe
 50            55            60

Gln Pro Thr Asn Glu Met Met Leu Lys Phe Tyr Ser Phe Tyr Lys Gln
 65            70            75            80

Ala Thr Glu Gly Pro Cys Lys Leu Ser Arg Pro Gly Phe Trp Asp Pro
 85            90            95

Ile Gly Arg Tyr Lys Trp Asp Ala Trp Ser Ser Leu Gly Asp Met Thr
100           105           110

Lys Glu Glu Ala Met Ile Ala Tyr Val Glu Glu Met Lys Lys Ile Ile
115           120           125

Glu Thr Met Pro Met Thr Glu Lys Val Glu Glu Leu Leu Arg Val Ile
130           135           140

Gly Pro Phe Tyr Glu Ile Val Glu Asp Lys Lys Ser Gly Arg Ser Ser
145           150           155           160

Asp Ile Thr Ser Asp Leu Gly Asn Val Leu Thr Ser Thr Pro Asn Ala
165           170           175

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Lys Thr Val Asn Gly Lys Ala Glu Ser Ser Asp Ser Gly Ala Glu Ser
 180 185 190
 Glu Glu Glu Glu Ala Gln Glu Glu Val Lys Gly Ala Glu Gln Ser Asp
 195 200 205
 Asn Asp Lys Lys Met Met Lys Lys Ser Ala Asp His Lys Asn Leu Glu
 210 215 220
 Val Ile Val Thr Asn Gly Tyr Asp Lys Asn Gly Phe Val Gln Asp Ile
 225 230 235 240
 Gln Asn Asp Ile His Ala Ser Ser Ser Leu Asn Gly Arg Ser Thr Glu
 245 250 255
 Glu Val Lys Pro Ile Asp Glu Asn Leu Gly Gln Thr Gly Lys Ser Ala
 260 265 270
 Val Cys Ile His Gln Asp Ile Asn Asp Asp His Val Glu Asp Val Thr
 275 280 285
 Gly Ile Gln His Leu Thr Ser Asp Ser Asp Ser Glu Val Tyr Cys Asp
 290 295 300
 Ser Met Glu Gln Phe Gly Gln Glu Glu Ser Leu Asp Ser Phe Thr Ser
 305 310 315 320
 Asn Asn Gly Pro Phe Gln Tyr Tyr Leu Gly Gly His Ser Ser Gln Pro
 325 330 335
 Met Glu Asn Ser Gly Phe Arg Glu Asp Ile Gln Val Pro Pro Gly Asn
 340 345 350
 Gly Asn Ile Gly Asn Met Gln Val Val Ala Val Glu Gly Lys Gly Glu
 355 360 365
 Val Lys His Gly Gly Glu Asp Gly Arg Asn Asn Ser Gly Ala Pro His
 370 375 380
 Arg Glu Lys Arg Gly Gly Glu Thr Asp Glu Phe Ser Asn Val Arg Arg
 385 390 395 400
 Gly Arg Gly His Arg Met Gln His Leu Ser Glu Gly Thr Lys Gly Arg
 405 410 415
 Gln Val Gly Ser Gly Gly Asp Gly Glu Arg Trp Gly Ser Asp Arg Gly
 420 425 430
 Ser Arg Gly Ser Leu Asn Glu Gln Ile Ala Leu Val Leu Met Arg Leu
 435 440 445
 Gln Glu Asp Met Gln Asn Val Leu Gln Arg Leu Gln Lys Leu Glu Thr
 450 455 460
 Leu Thr Ala Leu Gln Ala Lys Ser Ser Thr Ser Thr Leu Gln Thr Ala
 465 470 475 480

Pro Gln Pro Thr Ser Gln Arg Pro Ser Trp Trp Pro Phe Glu Met Ser
 485 490 495

Pro Gly Val Leu Thr Phe Ala Ile Ile Trp Pro Phe Ile Ala Gln Trp
 500 505 510

Leu Val Tyr Leu Tyr Tyr Gln Arg Arg Arg Lys Leu Asn Leu Glu
 515 520 525

<210> 55
 <211> 1586
 <212> DNA
 <213> Homo sapiens

<400> 55
 aagcttccac catgttccag tttcatgcag gctcttggga aagctgggtgc tgctgctgcc 60
 tgattcccg cgcacagacct tgggaccggg gccaacactg gcagctggag atggcggaca 120
 cgagatccgt gcacgagact aggtttgagg cggccgtgaa ggtgatccag agtttgccga 180
 agaatggttc attccagcca acaaatgaaa tgatgcttaa attttatagc ttctataagc 240
 aggcaactga aggaccctgt aaactttcaa ggcctggatt ttgggatoct attggaagat 300
 ataaatggga tgcttggagt tcaactgggtg atatgaccaa agaggaagcc atgattgcat 360
 atgttgaaga aatgaaaaag attattgaaa ctatgccaat gactgagaaa gttgaagaat 420
 tgctgcgtgt cataggtcca ttttatgaaa ttgtcgaaga caaaaagagt ggcaggagtt 480
 ctgatataac ctcagatctt ggtaatgttc tcaacttctac tccgaacgcc aaaaccgta 540
 atggtaaagc tgaaagcagt gacagtggag ccgagtctga ggaagaagag gcccaagaag 600
 aagtgaaggg agcagaacaa agtgataatg ataagaaaat gatgaagaag tcagcagacc 660
 ataagaattt ggaagtcatt gtcactaatg gctatgataa agatggcttt gttcaggata 720
 tacagaatga cattcatgcc agttcttccc tgaatggcag aagcactgaa gaagtaaagc 780
 ccattgatga aaacttgggg caaactggaa aatctgctgt ttgcattcac caagatataa 840
 atgatgatca tgttgaagat gttacaggaa ttcagcattt gacaagcgat tcagacagt 900
 aagtttactg tgattctatg gaacaatttg gacaagaaga gtcttttagac agctttacgt 960
 ccaacaatgg accatttcag tattacttgg gtggtcattc cagtcaaccc atggaaaatt 1020
 ctggatttcg tgaatatatt caagtacctc ctggaaatgg caacattggg aatatgcagg 1080
 tggttgcagt tgaaggaaaa ggtgaagtca agcatggagg agaagatggc aggaataaca 1140
 gcggagcacc acaccgggag aagcagggcg gagaaactga cgaattctct aatgttggaa 1200
 gaggaagagg acataggatg caacacttga gcgaagggaac caagggccgg caggtgggaa 1260
 gtggagggtga tggggagcgc tggggctccg acagaggggtc ccgaggcagc ctcaatgagc 1320
 agatcgccct cgtgctgatg agactgcagg aggacatgca gaatgtcctt cagagactgc 1380
 agaaactgga aacgccgact gctttgcagg caaaatcatc aacatcaaca ttgcagactg 1440
 ctccctcagcc cacctcacag agaccatctt ggtggccctt cgagatgtct cctggtgtgc 1500
 taacgtttgc catcatatgg ccttttattg cacagtgggt ggtgtattta tactatcaaa 1560
 gaaggagaag aaaactgaac ctcgag 1586

<210> 56
 <211> 528
 <212> PRT
 <213> Homo sapiens

<400> 56
 Ala Ser Thr Met Phe Gln Phe His Ala Gly Ser Trp Glu Ser Trp Cys
 1 5 10 15

Cys Cys Cys Leu Ile Pro Ala Asp Arg Pro Trp Asp Arg Gly Gln His
 20 25 30
 Trp Gln Leu Glu Met Ala Asp Thr Arg Ser Val His Glu Thr Arg Phe
 35 40 45
 Glu Ala Ala Val Lys Val Ile Gln Ser Leu Pro Lys Asn Gly Ser Phe
 50 55 60
 Gln Pro Thr Asn Glu Met Met Leu Lys Phe Tyr Ser Phe Tyr Lys Gln
 65 70 75 80
 Ala Thr Glu Gly Pro Cys Lys Leu Ser Arg Pro Gly Phe Trp Asp Pro
 85 90 95
 Ile Gly Arg Tyr Lys Trp Asp Ala Trp Ser Ser Leu Gly Asp Met Thr
 100 105 110
 Lys Glu Glu Ala Met Ile Ala Tyr Val Glu Glu Met Lys Lys Ile Ile
 115 120 125
 Glu Thr Met Pro Met Thr Glu Lys Val Glu Glu Leu Leu Arg Val Ile
 130 135 140
 Gly Pro Phe Tyr Glu Ile Val Glu Asp Lys Lys Ser Gly Arg Ser Ser
 145 150 155 160
 Asp Ile Thr Ser Asp Leu Gly Asn Val Leu Thr Ser Thr Pro Asn Ala
 165 170 175
 Lys Thr Val Asn Gly Lys Ala Glu Ser Ser Asp Ser Gly Ala Glu Ser
 180 185 190
 Glu Glu Glu Glu Ala Gln Glu Glu Val Lys Gly Ala Glu Gln Ser Asp
 195 200 205
 Asn Asp Lys Lys Met Met Lys Lys Ser Ala Asp His Lys Asn Leu Glu
 210 215 220
 Val Ile Val Thr Asn Gly Tyr Asp Lys Asp Gly Phe Val Gln Asp Ile
 225 230 235 240
 Gln Asn Asp Ile His Ala Ser Ser Ser Leu Asn Gly Arg Ser Thr Glu
 245 250 255
 Glu Val Lys Pro Ile Asp Glu Asn Leu Gly Gln Thr Gly Lys Ser Ala
 260 265 270
 Val Cys Ile His Gln Asp Ile Asn Asp Asp His Val Glu Asp Val Thr
 275 280 285
 Gly Ile Gln His Leu Thr Ser Asp Ser Asp Ser Glu Val Tyr Cys Asp
 290 295 300
 Ser Met Glu Gln Phe Gly Gln Glu Glu Ser Leu Asp Ser Phe Thr Ser
 305 310 315 320

<210> 58
 <211> 36
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:oligonucleotide
 primer

 <400> 58
 aagcttgaca gaccttgga ccggggccaa cactgg 36

 <210> 59
 <211> 36
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:oligonucleotide
 primer

 <400> 59
 ctcgagagga gacatctcga agggccacca agatgg 36

 <210> 60
 <211> 31
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:oligonucleotide
 primer

 <400> 60
 aagcttacta ggtttgaggc ggccgtgaag g 31

 <210> 61
 <211> 36
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence:oligonucleotide
 primer

 <400> 61
 ctcgagagga gacatctcga agggccacca agatgg 36

 <210> 62
 <211> 38
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:oligonucleotide
 primer

<400> 62
 aagcttccac catgttccag ttcatgcag gctcttgg 38

<210> 63
 <211> 34
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:oligonucleotide
 primer

<400> 63
 ctcgagggttc agttttcttc tccttctttg atag 34

<210> 64
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:oligonucleotide
 primer

<400> 64
 gcagtctctg aaggacattc tgcatt 25

<210> 65
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:oligonucleotide
 primer

<400> 65
 tgttattcct gccatcttct cctcc 25

<210> 66
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:oligonucleotide
 primer

<400> 66

acttcactgt ctgaatcgct tgtca 25

<210> 67
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 67
ttcttatggc ctgctgactt cttcatc 27

<210> 68
<211> 25
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<220>
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primer

<400> 68
tgacacgcag caattcttca acttt 25

<210> 69
<211> 25
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<220>
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primer

<400> 69
actgcagaaa ctggaaacgc tgact 25

<210> 70
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<220>
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primer

<400> 70
gagaagatgg caggaataac agcg 24

<210> 71
<211> 29

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 <400> 71
 gtttactgtg attctatgga acaatttgg 29

 <210> 72
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 <400> 72
 ccataagaat ttggaagtca ttgtcactaa 30

 <210> 73
 <211> 29
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 <400> 73
 tcataggtcc attttatgaa attgtcgag 29

 <210> 74
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 <400> 74
 catgtcctcc tgcagtctca tca 23

 <210> 75
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primer

<400> 75
cttcaactgc aaccacctgc atattcc 27

<210> 76
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<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 76
gctgaattcc tgtaacatct tcaaca 26

<210> 77
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<212> DNA
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<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 77
ttttcttatc attatcactt tggtctgctc c; 31

<210> 78
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<212> DNA
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primer

<400> 78
attcttcaac tttctcagtc attggc 26

<210> 79
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primer

<400> 79
gctgatgaga ctgcaggagg acat 24

<210> 80
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primer

<400> 80
gaaaaggtga agtcaagcat ggagg 25

<210> 81
<211> 23
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primer

<400> 81
tcagcatttg acaagcgatt cag 23

<210> 82
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
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primer

<400> 82
aagaagtcag cagaccataa gaatttg 27

<210> 83
<211> 23
<212> DNA
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primer

<400> 83
gctgcgtgtc ataggtccat ttt 23

<210> 84
<211> 26
<212> DNA
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<400> 84
 caaagcagtc agcgtttcca gtttct 26

<210> 85
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<400> 85
 cgctgttatt cctgccatct tctc 24

<210> 86
 <211> 24
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 <213> Artificial Sequence

<220>
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<400> 86
 tcgcttgatca aatgctgaat tcct 24

<210> 87
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 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 87
 tatcactttg ttctgctcct ttcactt 27

<210> 88
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 <212> DNA
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<220>
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<400> 88
tcaacatatg caatcatggc ttcc

24

<210> 89
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

ai
care
<400> 89
gcaaaatcat caacatcaac attgcag

27

<210> 90
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 90
aggcggagaa actgacgaat tctctaa

27

<210> 91
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 91
acaagcgatt cagacagtga agttta

26

<210> 92
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 92
tgataagaaa atgatgaaga agtcagc

27